

Large Filing Separator Sheet

Case Number: 09-1066-EL-BGN

File Date: 12/21/09

Section: 5

Number of Pages: 200

Description of Document: Application
Volume 2

Site: W053AA

Rater(s): Matthew Neehatal

Date: 09/20/09

1

1

max 6 pts.

subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1

2

max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7

9

max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☐ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other _____

3

12

max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (8)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

12

subtotal this page

Site:	Rater(s):	Date:
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1	subtotal this page
0	0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1	1
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

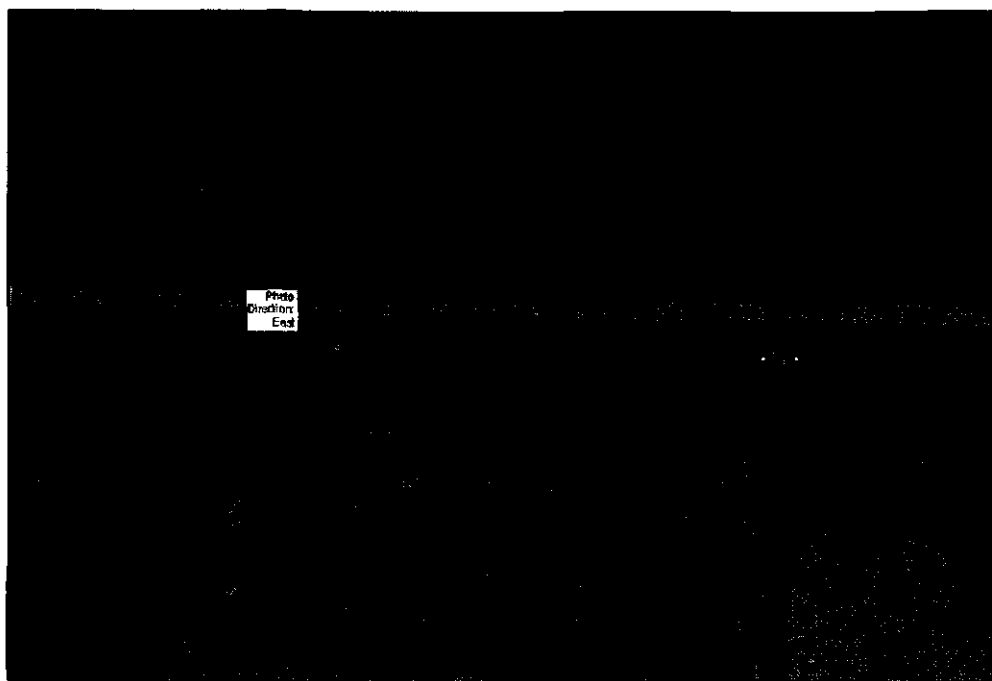
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

13	GRAND TOTAL(max 100 pts)
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○ Photo Location
 LSOS NHD Mapped Shores
 Wetland Boundary
 Additional Features

N

0 100 200 Feet

Wetland
W053CA



Wetland W053CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W053CA		
		ASSOCIATED STREAM ID No: S048CA		
DATE: 09/20/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/ Van Wert	ROVER FILE: RAH090920.cor	QUAD NAME: Convooy	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Xanthium strumarium	Herbaceous	Fac	30 %	
2. Carex sp.	Herbaceous	Fac Wet	10 %	
3. Setaria glauca	Herbaceous	Fac	20 %	
4. Echinochloa sp.	Herbaceous	Fac Wet	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside drainage				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN FT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks		Local Soil Survey		
Sediment Deposits				
REMARKS: roadside drainage				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-6	B	10YR 4/1	10YR 5/6 5%, 10YR 5/8 10%, and Rocky	Silt Loam
Rock Refusal				
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W053ca</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/20/09</u>
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<u>2</u>	<u>2</u>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.5 acre

<u>1</u>	<u>3</u>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<u>10</u>	<u>13</u>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other _____

<u>6</u>	<u>19</u>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

<u>19</u>

subtotal this page

Site: W053 CA	Rater(s): R Hook	Date: 9/20/02
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19

subtotal first page

— 19

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 21

max 20 pts.

subtotal

Metric 6. Plant communities, Interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

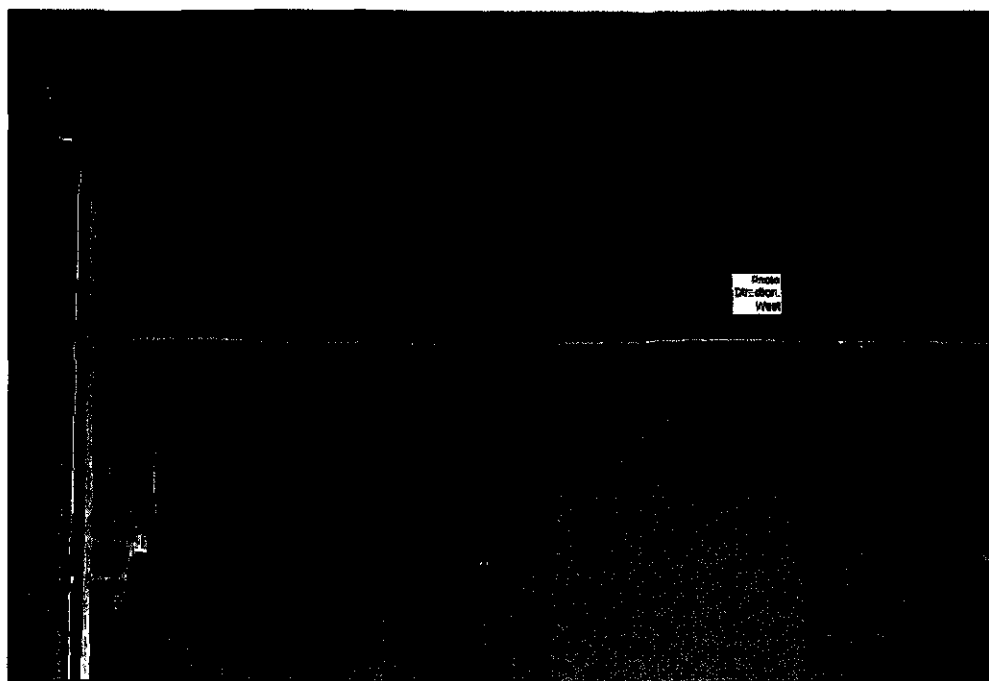
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21

GRAND TOTAL (max 100 pts)



Wetland W062CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm

WETLAND ID No.: W062CA

ASSOCIATED STREAM ID No: N/A

DATE: 10/15/2009

CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm

INVESTIGATORS: AFMN

STATE/COUNTY: Ohio/Van Wert

ROVER FILE:

RI01509AFMN.cor

QUAD NAME: Scott

HUC 12 CODE: 041000070703

TOWNSHIP: Union

PHOTO No.: AP101509_014

WETLAND QUALITY: Low

WETLAND TYPE: Palustrine
SUBTYPE: Emergent

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Typha latifolia</i>	Herbaceous	Obligate	90 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	10 %
3.			%
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: Agricultural ditch

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: 0 (in)

DEPTH TO FREE WATER IN PIT: 0 (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

Saturated Upper 12in

REMARKS: Agricultural ditch

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2	7.5YR 5/8	Clay Loam
4-16+	B	10YR 4/2	2.5YR 4/8	Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric

Gleyed

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes

IS THIS SAMPLING POINT WITHIN A WETLAND? Yes

WETLAND HYDROLOGY PRESENT? Yes

IS THIS AN ISOLATED WETLAND? No

HYDRIC SOILS PRESENT? Yes

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED? No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U062CA		
		ASSOCIATED WETLAND ID No: W062CA		
DATE: 10/15/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: AF MN	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: AF101509_015		
WETLAND QUALITY: N/A		WETLAND TYPE N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Toxicodendron radicans	Herbaceous	Fac	20 %	
2. Glycine max	Herbaceous	Upland	60 %	
3. Cornus sp.	Herbaceous	Fac	20 %	
4. Morus rubra	Shrub	Fac Up	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 40				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)			
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE, IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-16+	A	10yr 4/2	7.5yr 5/8 10%	Clay Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? No		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: W062CA

Rater(s): Matthew Nechvatal

Date: 10/15/09

1

1

Metric 1. Wetland Area (size).

max 8 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (8 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1

2

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11

13

Metric 3. Hydrology.

max 30 pts.

subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☐ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☐ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other _____

12

25

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (8)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

25

subtotal this page

Site:	Rater(s):	Date:
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3

subtotal this page

0	0
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3	3
---	---

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. Horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

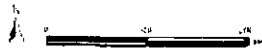
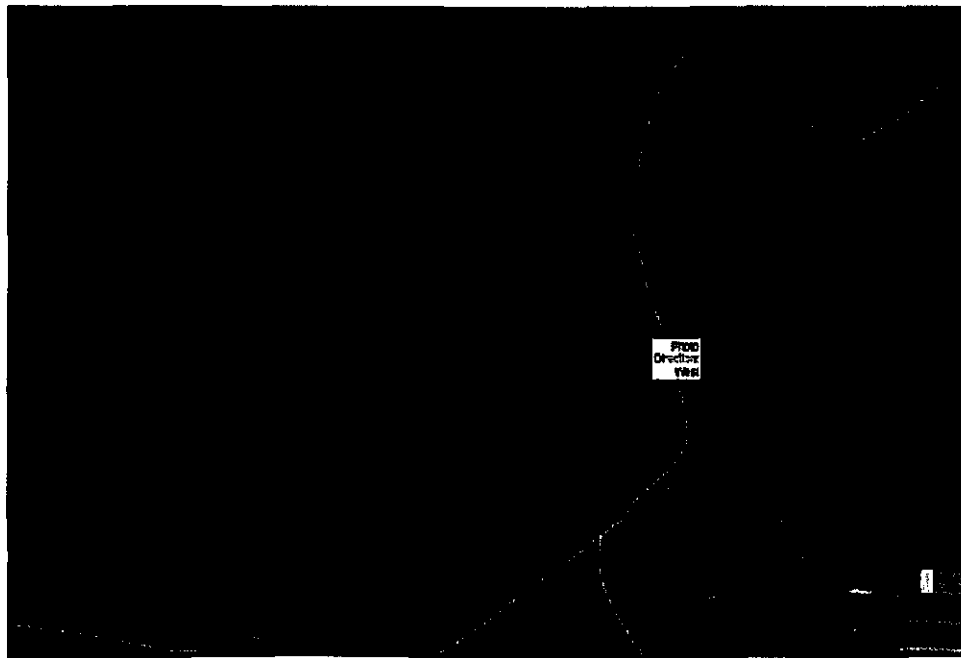
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

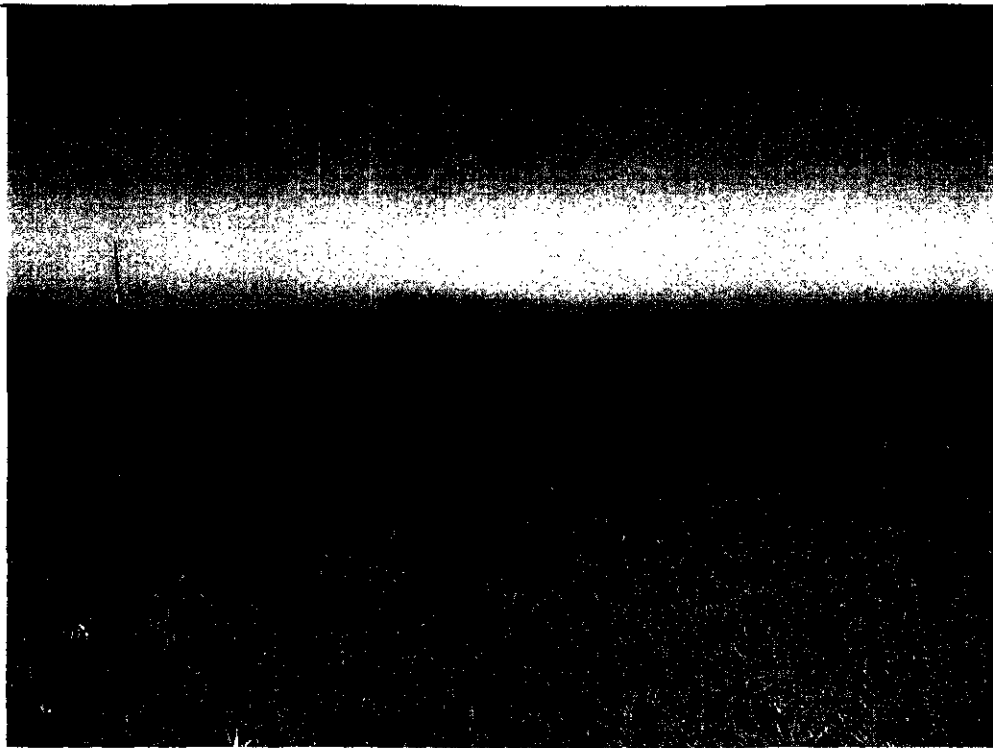
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

28

GRAND TOTAL(max 100 pts)



Wetland
W069CA



Wetland W069CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W069CA		
		ASSOCIATED STREAM ID No: N/A		
DATE 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: D. West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091809ADW.cor	QUAD NAME: Payne	
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 069A8W		
WETLAND QUALITY: Low		WETLAND TYPE Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Glycine max	Herbaceous	Upland	80 %	
2. Morus rubra	Shrub	Fac Up	10 %	
3. Ambrosia trifida	Herbaceous	Fac	10 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 10				
VEGETATION REMARKS: farmed wetland, crops present, but suppressed in areas, corn ag field to N				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: 12 (in)			
DEPTH TO FREE WATER IN PIT: 12 (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drainage Patterns	Local Soil Survey			
Saturated Upper 12in				
REMARKS: farmed wetland, crops present, but suppressed in areas, corn ag field to N				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Saranac silty clay loam, occasionally flooded			DRAINAGE CLASS: Poorly Drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12	A	2.5YR 3/1	No mottles	Silt loam
12+	B	2.5YR 3/2	5% 10YR 6/6	Silt loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? No		SIGNIFICANTLY DISTURBED: Yes	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U069AA	
		ASSOCIATED WETLAND ID No: W069AA	
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M.Nechvatal	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Payne	
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 069A9S	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Daucus Carota	Herbaceous	Upland	10 %
2. Trifolium pratense	Herbaceous	Fac Up -	20 %
3. Seteria sp.	Herbaceous	Fac Up	30 %
4. Poa sp.	Herbaceous	Fac Up	40 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: (in)
DEPTH TO FREE WATER IN PYT: (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Saranac silty clay loam, occasionally flooded	DRAINAGE CLASS: Poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
no soils pit dug		no soils pit dug		
no soils pit dug				

HYDRIC SOIL INDICATORS:

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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

2	2
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Metric 1. Wetland Area (size).

may find

Abstract

Select one size class and assign score.

- >50 acres (>20.2ha) (6 pts)
 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 10 to <25 acres (4 to <10.1ha) (4 pts)
 3 to <10 acres (1.2 to <4ha) (3 pts)
 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 <0.1 acres (0.04ha) (0 pts)

1	3
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Metric 2. Upland buffers and surrounding land use.

May 14 1985

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2e. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ **WIDE.** Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ **MEDIUM.** Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ **NARROW.** Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ **VERY NARROW.** Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10.5	13.5
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Metric 3. Hydrology.

may 30 1964

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3a. Sources of Water. Score all that apply.

- | | |
|-------------------------------------|--|
| <input type="checkbox"/> | High pH groundwater (5) |
| <input type="checkbox"/> | Other groundwater (3) |
| <input checked="" type="checkbox"/> | Precipitation (1) |
| <input type="checkbox"/> | Seasonal/Intermittent surface water (3) |
| <input type="checkbox"/> | Perennial surface water (lake or stream) (5) |






3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ ≤0.4m (<15.7in) (1)





3e. Modifications to natural hydrologic regime. Score one or double check and average.

- | | |
|-------------------------------------|----------------------------|
| <input type="checkbox"/> | None or none apparent (12) |
| <input checked="" type="checkbox"/> | Recovered (7) |
| <input checked="" type="checkbox"/> | Recovering (3) |
| <input type="checkbox"/> | Recent or no recovery (1) |





Check all disturbances observed

- | | |
|---|------------------|
|  | ditch |
|  | tile |
|  | dike |
|  | weir |
|  | stormwater input |

3b. Connectivity. Score all that apply.

- | | |
|---|---|
|  | 100 year floodplain (1) |
|  | Between stream/lake and other human use (1) |
|  | Part of wetland/upland (e.g. forest), complex (1) |
|  | Part of riparian or upland corridor (1) |

3d. Duration inundation/saturation. Score one or uld check.

-  Semi- to permanently inundated/saturated (4)
 Regularly inundated/saturated (3)
 Seasonally inundated (2)
 Seasonally saturated in upper 30cm (12in) (1)

3	165
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Metric 4. Habitat Alteration and Development.

May 20th

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4a. Substrate disturbance. Score one or double check and average.

- | | |
|-------------------------------------|---------------------------|
| <input type="radio"/> | None or none apparent (4) |
| <input type="checkbox"/> | Recovered (3) |
| <input type="checkbox"/> | Recovering (2) |
| <input checked="" type="checkbox"/> | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

- | | |
|-------------------------------------|---------------------|
| <input type="checkbox"/> | Excellent (7) |
| <input type="checkbox"/> | Very good (6) |
| <input type="checkbox"/> | Good (5) |
| <input type="checkbox"/> | Moderately good (4) |
| <input type="checkbox"/> | Fair (3) |
| <input type="checkbox"/> | Poor to fair (2) |
| <input checked="" type="checkbox"/> | Poor (1) |

4c. **Habitat alteration.** Score one or double check and average.

- | | |
|-------------------------------------|---------------------------|
| <input type="checkbox"/> | None or none apparent (9) |
| <input type="checkbox"/> | Recovered (6) |
| <input type="checkbox"/> | Recovering (3) |
| <input checked="" type="checkbox"/> | Recent or no recovery (1) |

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- | | |
|-------------------------------------|--------------------------------|
| <input type="checkbox"/> | shrub/sapling removal |
| <input type="checkbox"/> | herbaceous/aquatic bed removal |
| <input type="checkbox"/> | sedimentation |
| <input type="checkbox"/> | dredging |
| <input checked="" type="checkbox"/> | farming |
| <input type="checkbox"/> | nutrient enrichment |

165

[scroll to top](#)

Site: <u>W060</u>	Rater(s): <u>...</u>	Date: <u>...</u>
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1

subtotal this page

max 10 pts.	subtotal
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Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	subtotal
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Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 DRAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☒ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

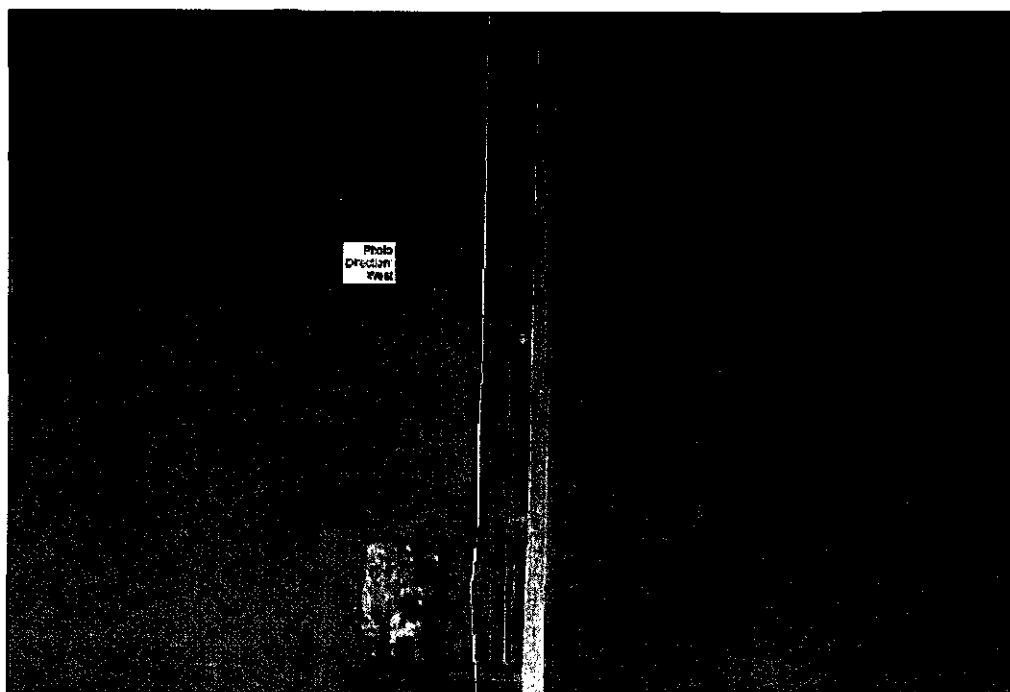
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.58 acres)
3	High 4ha (9.58 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

12.5 GRAND TOTAL (max 100 pts)

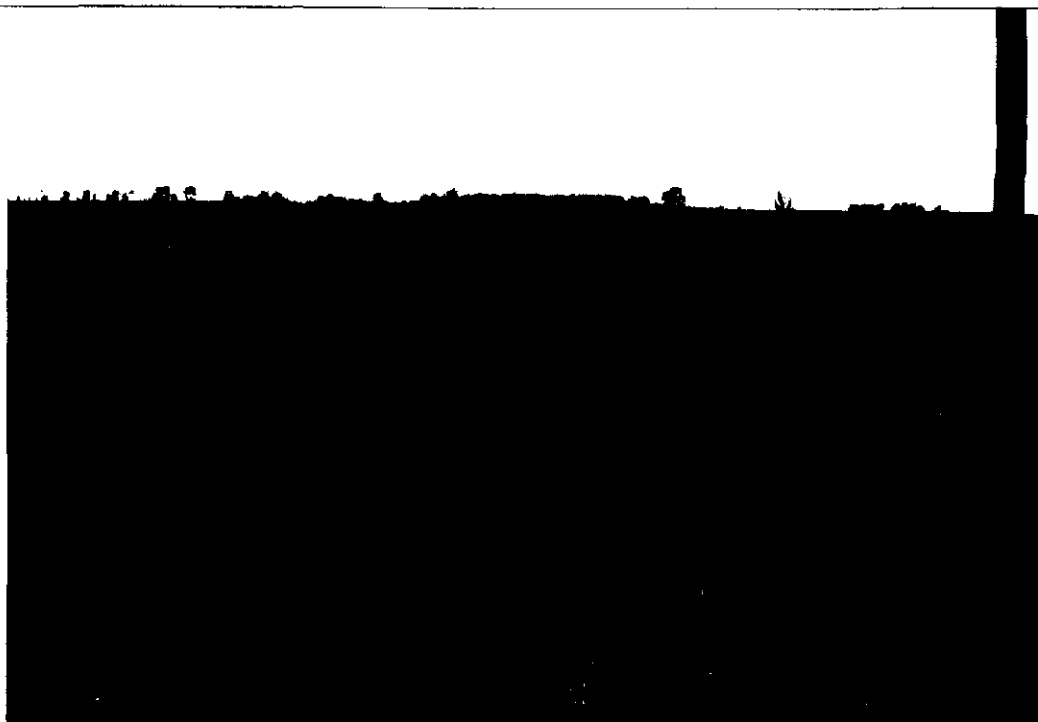
Refer to the most recent DRAM Score Calibration Report for the scoring breakdown between wetland categories at the following address: <http://www.epa.gov/orf/ow40/M01.html>



☐ Photo Location
☐ USGS NHD Mapped Stream
☐ Wetland Boundary
☐ Additional Feature



Wetland
W070AA



Wetland W070AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W070AA	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Convoy
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO NO.: 070A69N & 070A70S	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES		STRATUM	INDICATOR
1. <i>Morus rubra</i>		Shrub	Fac Up
2. <i>Phalaris arundinacea</i>		Herbaceous	Fac Wet +
3.			
4.			
5.			
6.			
PERCENT COVER			
			10 %
			90 %
			%
			%
			%
			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN FT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Drainage Patterns		Local Soil Survey	
		FAC Neutral Test	
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-3	A	10YR 5/1	No mottles
3-12+	B	2.5YR 5/1	10% 10YR 6/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
			Silt loam
			Clay loam
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U070AA	
		ASSOCIATED WETLAND ID No: W070AA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC. / Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Convoys	
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 070A725	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Trifolium pratense	Herbaceous	Fac Up -	10 %
2. Poa sp.	Herbaceous	Fac Up	60 %
3. Setaria sp.	Herbaceous	Fac Up	20 %
4. Ambrosia trifida	Herbaceous	Fac	10 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, or FAC (EXCLUDING FAC-): 10

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
no soil pit dug		no soil pit dug		
no soil pit dug				

HYDRIC SOIL INDICATORS:

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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: Rater(s): Date: 2/2/09

2	2
---	---

Metric 1. Wetland Area (size).

max 6 pts

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

1	3
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Metric 2. Upland buffers and surrounding land use.

max 16 pts

subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4.5	11.5
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max 30 pts

subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☒ Recovered (7)
☐ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ ditch
☐ tile
☐ dike
☐ weir
☒ stormwater input

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

7	20.5
---	------

max 20 pts

subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
☒ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (8)
☒ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

20.5

subtotal this page

Site:	Rate(s):	Date:
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max 10 dls

Abstract

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

<input type="checkbox"/>	Bog (10)
<input type="checkbox"/>	Fen (10)
<input type="checkbox"/>	Old growth forest (10)
<input type="checkbox"/>	Mature forested wetland (5)
<input type="checkbox"/>	Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
<input type="checkbox"/>	Lake Erie coastal/tributary wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Plain Sand Prairies (Oak Openings) (10)
<input type="checkbox"/>	Relict Wet Prairies (10)
<input type="checkbox"/>	Known occurrence state/federal threatened or endangered species (10)
<input type="checkbox"/>	Significant migratory songbird/water fowl habitat or usage (10)
<input type="checkbox"/>	Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1999-2000

5810

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities:

Score all present using 0 to 3 scale.

<input type="checkbox"/>	Aquatic bed
<input type="checkbox"/>	Emergent
<input type="checkbox"/>	Shrub
<input type="checkbox"/>	Forest
<input type="checkbox"/>	Mudflats
<input type="checkbox"/>	Open water
<input type="checkbox"/>	Other

6b horizontal (plan view) interspersions

Select only one.

☐ High (6)
☐ Moderately high (4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

<input checked="" type="checkbox"/>	Extensive >75% cover (-5)
<input type="checkbox"/>	Moderate 25-75% cover (-3)
<input type="checkbox"/>	Sparse 5-25% cover (-1)
<input type="checkbox"/>	Nearly absent <5% cover (0)
<input type="checkbox"/>	Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

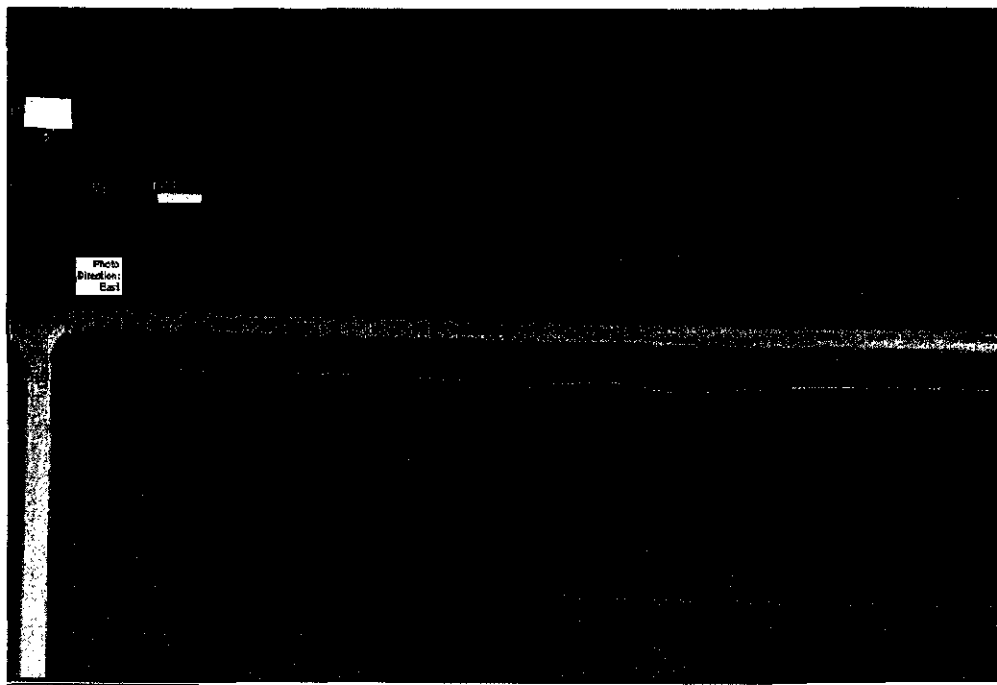
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20.5 GRAND TOTAL(max 100 pts)

Refer to the most recent USAD State Classification Manual for an current breakdowns of classification categories at the following address: <http://www.usa.state.gov/IN/401.htm>

last revised 1 February 2001 jim



○ Photo Location
 USGS NHD Mapped Streams
 Wetland Boundary
 Additional Feature



0 100 200 feet

Wetland
W072CA



Wetland W072CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W072CA	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091014A.cor	QUAD NAME: Convoy
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.: 011	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	10 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	80 %
3. <i>Typha latifolia</i>	Herbaceous	Obligate	10 %
4.			%
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: drainage ditch			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: 4 (in)	
DEPTH TO FREE WATER IN PIT: 6 (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Saturated Upper 12in		FAC Neutral Test	
Drainage Patterns		Oxi Root Channels	
REMARKS: drainage ditch			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-6	O	2.5Y 3/2	
6+	C	10YR 4/1	7.5YR 4/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U072CA	
		ASSOCIATED WETLAND ID No: W072CA	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Convoys	
HUC12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: 011	
WETLAND QUALITY: N/A		WETLAND TYPE N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Setaria faberi</i>	Herbaceous	Upland	40 %
2. <i>Bromus inermis</i>	Herbaceous	Upland	30 %
3. <i>Danica carota</i>	Herbaceous	Upland	10 %
4. <i>Solidago canadensis</i>	Herbaceous	Fac Up	20 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12+	A	2.5y 3/3		Silty Clay Loam
-				

HYDRIC SOIL INDICATORS:

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED? No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: W097AA/W085AA/W092CA Rater(s): R Hook Date: 9/17/09

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

6.7 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

20
subtotal this page

Site: W097AA/W085AA/W072CA Rater(s): R. HOOK Date: 7/17/09

20

subtotal first page

— 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 21

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

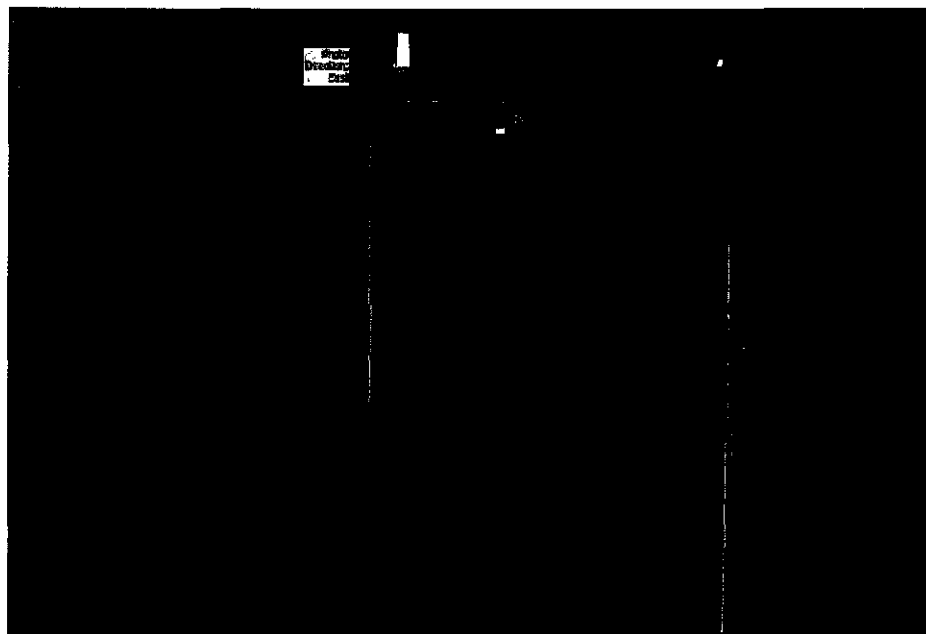
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

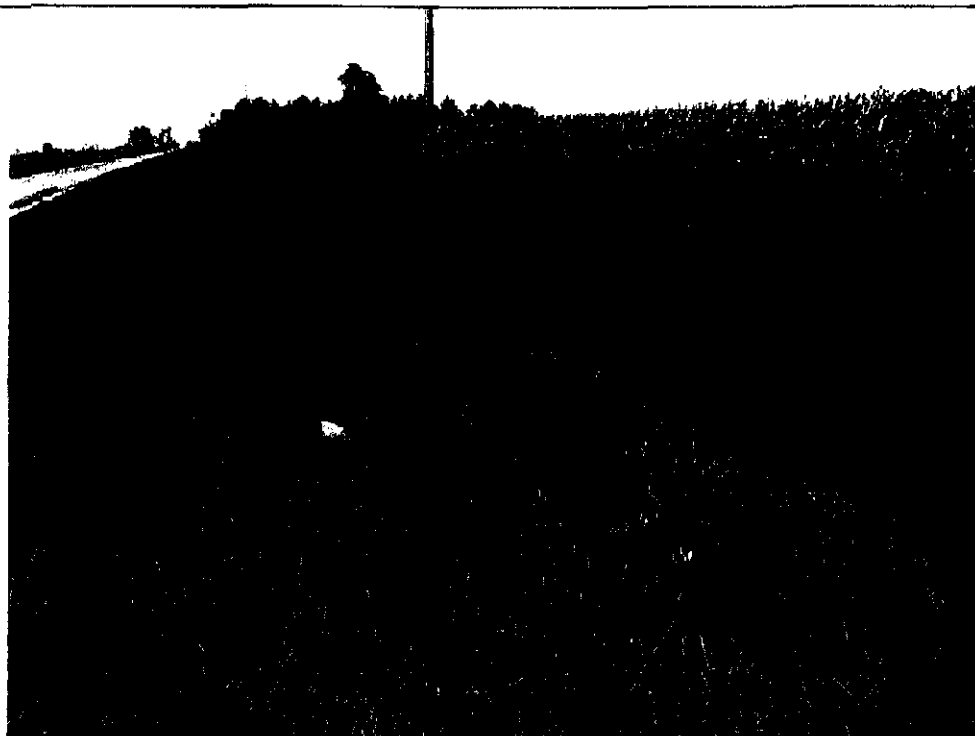
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 **GRAND TOTAL (max 100 pts)**



Wetland
W073CA



Wetland W073CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W073CA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Paulding	ROVER FILE: RAH0910714A.cor	QUAD NAME: Payne
HUC12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 002	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	20 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	80 %
3.			%
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: drainage ditch

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: 2 (in)	DEPTH TO SATURATED SOIL: 0 (in)
DEPTH TO FREE WATER IN PIT: 0 (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
Saturated Upper 12in	
Inundated	

REMARKS: drainage ditch

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-6	O	2.5Y 3/1	7.5YR 4/4	Silt Loam
6+	C	10YR 4/4		Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric		
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REMARKS: Deep excavation into substratum. Dominance by OBL species.

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes	IS THIS SAMPLING POINT WITHIN A WETLAND? Yes
WETLAND HYDROLOGY PRESENT? Yes	IS THIS AN ISOLATED WETLAND? No
HYDRIC SOILS PRESENT? Yes	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: W073CA	Rater(s): R Hook	Date: 10/14/09
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

6.3 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

20

subtotal this page

Site: W073 CA Rater(s): R Hook Date: 10/14/02

20

subtotal first page

— 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 22

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

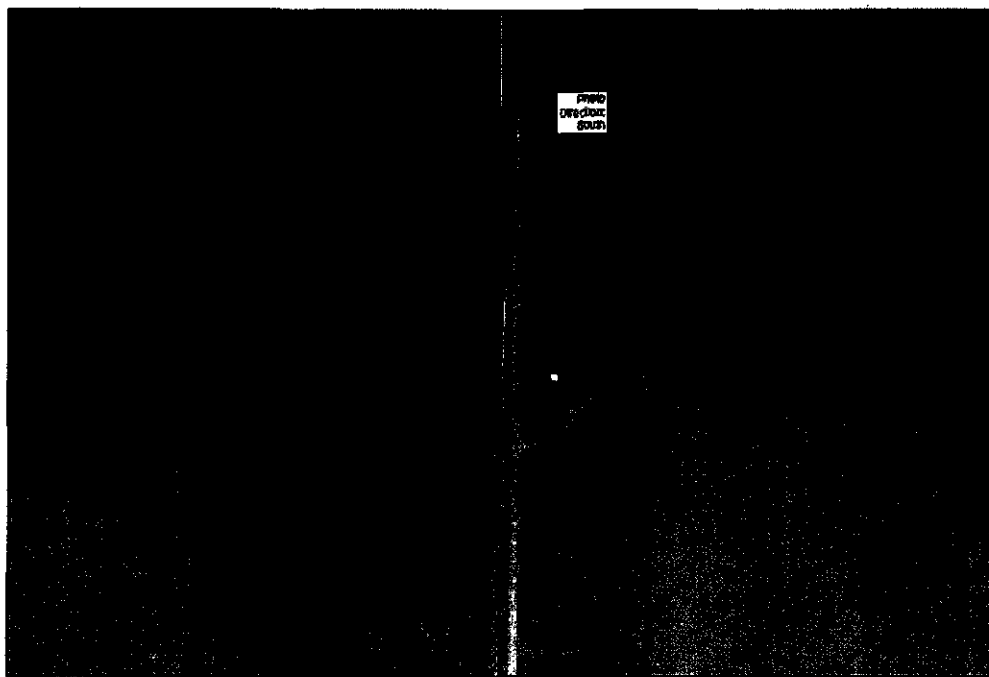
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

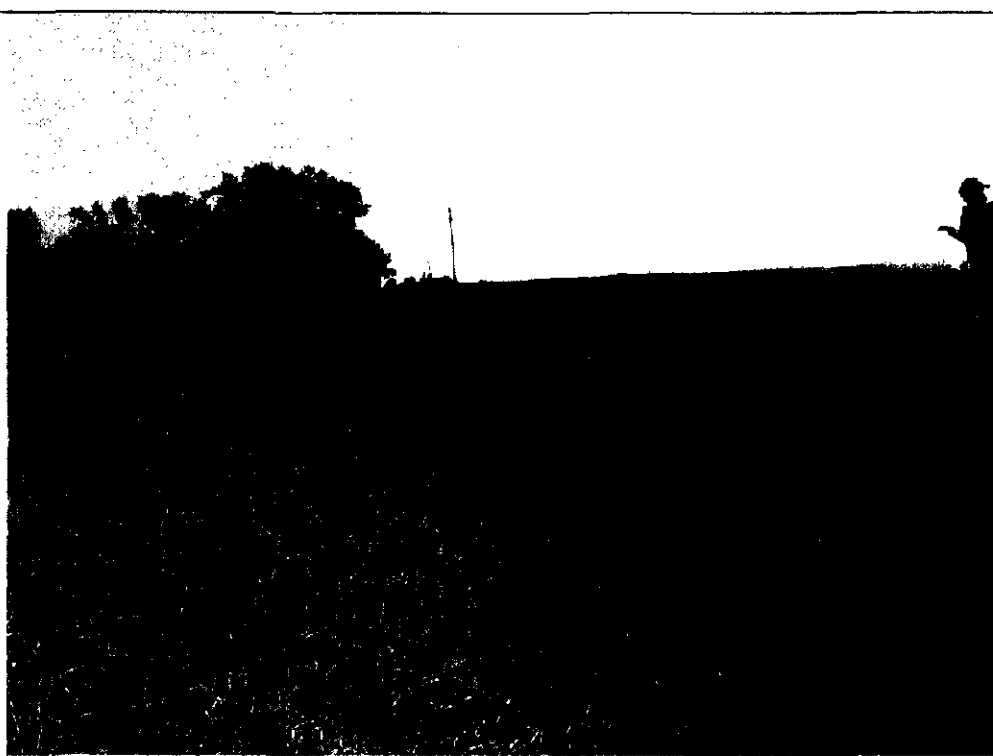
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

22 **GRAND TOTAL (max 100 pts)**



Wetland
W075CA



Wetland W075CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W075CA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Payne
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 075C55W & 075C56E	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES		STRATUM	INDICATOR
1. <i>Scirpus atrovirens</i>		Herbaceous	Obligate
2. <i>Typha latifolia</i>		Herbaceous	Obligate
3. <i>Carex</i> sp.		Herbaceous	Fac Wet
4. <i>Typha angustifolia</i>		Herbaceous	Obligate
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to S			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: 0 (in)	
DEPTH TO FREE WATER IN FT: 0 (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Drainage Patterns		Local Soil Survey	
Saturated Upper 12in		FAC Neutral Test	
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to S			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-2	A	10YR 5/1	2% 10YR 4/6
2-12+	B	10YR 5/1	20% 10YR 4/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silty Clay Loam			
Clay loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U075CA	
		ASSOCIATED WETLAND ID No: W075CA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Payne	
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 075C57E	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Trifolium pratense	Herbaceous	Fac Up -	10 %
2. Poa sp.	Herbaceous	Fac Up	70 %
3. Seteria sp.	Herbaceous	Fac Up	20 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
no soil pit dug		no soil pit dug		
no soil pit dug				

HYDRIC SOIL INDICATORS:

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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: W075CA	Rater(s): Matthew Nechvatal	Date: 09/17/09
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0	0
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Metric 1. Wetland Area (size).

max 6 pts subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

1	1
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Metric 2. Upland buffers and surrounding land use.

max 14 pts subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11	12
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Metric 3. Hydrology.

max 30 pts subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☐ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

9	21
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Metric 4. Habitat Alteration and Development.

max 20 pts subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

21

subtotal this page

Site:	Rater(s):	Date:
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1

subtotal this page

0	0
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1	1
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 2 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

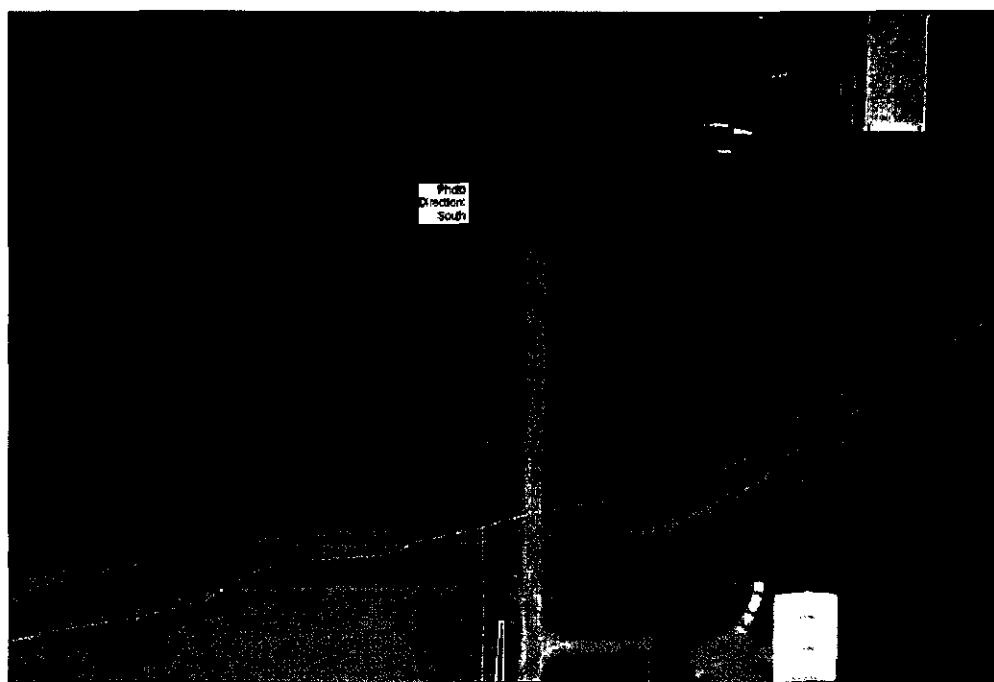
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

22

GRAND TOTAL(max 100 pts)



Wetland W080AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W080AA		
		ASSOCIATED STREAM ID NO: S080AA		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cor	QUAD NAME: Convoy	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.:		
WETLAND QUALITY: Low		WETLAND TYPE Palustrine SUBTYPE: Emergent		
PLANT SPECIES		STRATUM	INDICATOR	
1. <i>Leersia oryzoides</i>		Herbaceous	Obligate	
2. <i>Scirpus cyperinus</i>		Herbaceous	Obligate	
3.			%	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, or FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: 0 (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
	Water Marks	FAC Neutral Test		
Drainage Patterns		Oxi Root Channels		
REMARKS: roadside ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	2.5Y 4/2	Oxidized Rhizospheres	Silt Loam
4-12+	B	10YR 5/1	5YR 5/8 45%	Silty Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W080 AA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/18/09</u>
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<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.25 acre

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">2</div>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">10</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">12</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">7</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">19</div>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">19</div>

subtotal this page

Site: W080AA	Rater(s): RHook	Date: 9/12/09
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subtotal first page

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1. ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-6)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 GRAND TOTAL (max 100 pts)



Wetland
W085AA



Wetland W085AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W085AA		
		ASSOCIATED STREAM ID NO: N/A		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Echinochloa muricata	Herbaceous	Fac Wet +	30 %	
2. Typha latifolia	Herbaceous	Obligate	10 %	
3. Leersia oryzoides	Herbaceous	Obligate	40 %	
4. Alisma subcordatum	Herbaceous	Obligate	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks		FAC Neutral Test		
Drainage Patterns		Oxi Root Channels		
REMARKS: roadside ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-2	A	2.5Y 3/1	Oxidized Rhizospheres	Silt Loam
2-10	A	2.5Y 4/1	10YR 6/6 10% and Oxidized Rhizospheres	Silty Clay Loam
10-12+	B	10YR 4/1	10YR 6/6 10% & 5GY 4/1 5%	Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No		POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: W097AA/N085AA/W022CA Rater(s): R. Hock Date: 9/17/09

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >60 acres (>20.2ha) (6 pts)
- ☐ 25 to <60 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

6.7 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (8)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input checked="" type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

20

subtotal this page

Site: W097AA/W085AA/W072CA Rater(s): R Hook Date: 7/17/09

20

subtotal first page

— 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 21

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

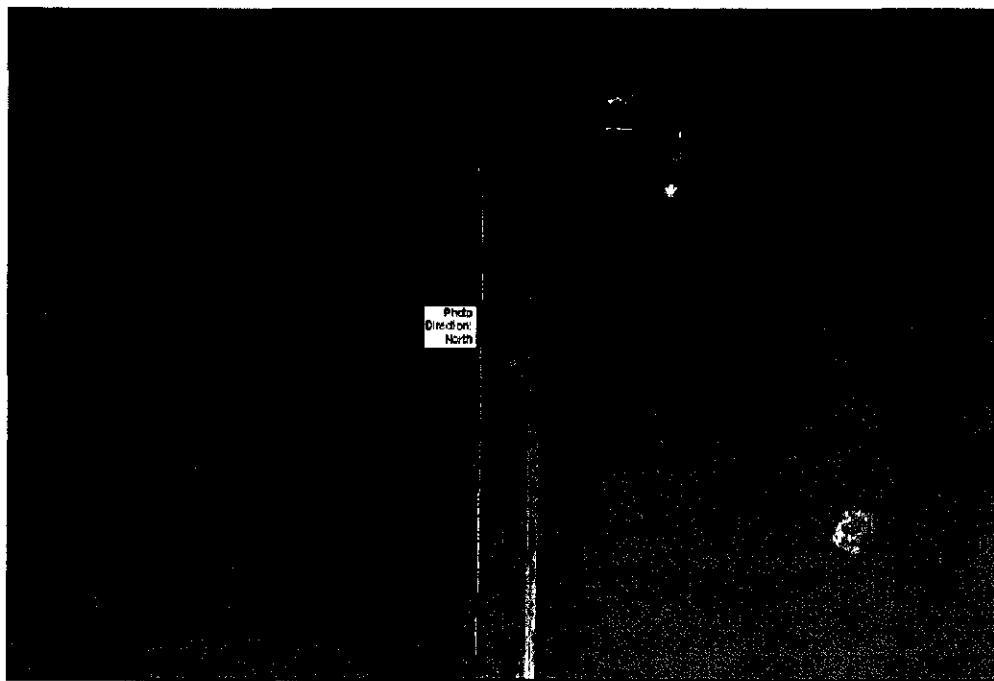
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 **GRAND TOTAL (max 100 pts)**



☐ Photo Location
☐ USGS NHD Mapped Streams
☐ Wetland Boundary
☐ Additional Feature



0 100 200 Feet

Wetland
W086CA



Wetland W086CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W086CA		
		ASSOCIATED STREAM ID No: S086CA		
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: 0		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Typha latifolia	Herbaceous	Obligate	40 %	
2. Scirpus validus	Herbaceous	Obligate	30 %	
3. Scirpus atrovirens	Herbaceous	Obligate	10 %	
4. Leersia oryzoides	Herbaceous	Obligate	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: ditch				
HYDROLOGY				
RECORDED DATA?	DESCRIBE:			
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)			
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:			
	FAC Neutral Test			
Drainage Patterns				
REMARKS: ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?			
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-2	A	2.5Y 7/6		Sand
2-10	A	10YR 5/3		Sand
10-12+	B	10YR 4/1	7.5YR 5/6 50%	Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric	Gleyed			
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED? No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W086, CA</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/17/09</u>
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<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>
max 8 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.3 acre

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">2</div>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">8</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">10</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.8in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.8in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">6</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">16</div>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">16</div>

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: W086CA	Rater(s): R Hook	Date: 9/17/09
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16

subtotal first page

- 16

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 19

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.
Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

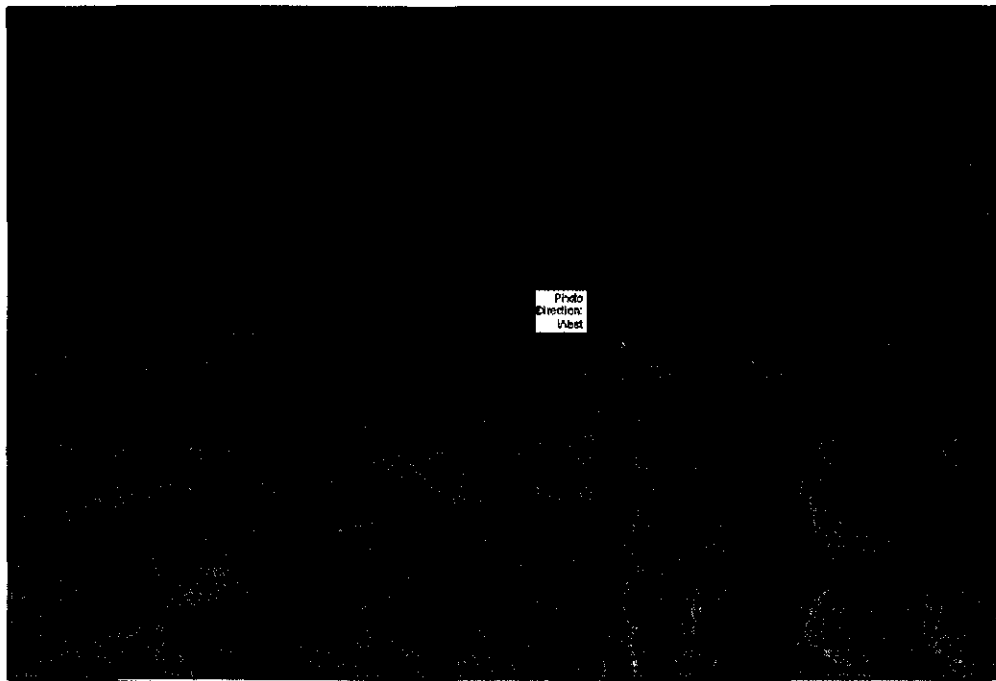
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19

GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapped Streams
☐ Wetland Boundary
☐ Additional Features



Wetland
W087AA



Wetland W087AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W087AA	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Paulding	ROVER FILE: RAH091014A.cor	QUAD NAME: Latty
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO NO.: 001	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	40 %
2. <i>Echinochloa</i> sp.	Herbaceous	Fac Wet	30 %
3. <i>Polygonum</i> sp.	Herbaceous	Fac Wet	10 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 80

VEGETATION REMARKS: drainage ditch

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: 0 (in)
DEPTH TO FREE WATER IN PIT: 2 (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
Saturated Upper 12in	
Drift Lines	
REMARKS: drainage ditch	

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-9	O	2.5Y 3/2	7.5YR 4/4	Silt Loam
9+	C	5Y 3/1	7.5YR 4/4	Sandy Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric	Gleyed	
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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes	IS THIS SAMPLING POINT WITHIN A WETLAND? Yes
WETLAND HYDROLOGY PRESENT? Yes	IS THIS AN ISOLATED WETLAND? No
HYDRIC SOILS PRESENT? Yes	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No
	POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U087AA	
		ASSOCIATED WETLAND ID No: W087AA	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Latty	
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 001	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Festuca sp.	Herbaceous	Fac Up	40 %
2. Bromus inermis	Herbaceous	Upland	30 %
3. Daucus carota	Herbaceous	Upland	10 %
4. Rubus allegheniensis	Herbaceous	Fac Up-	10 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-9	A	2.5y 3/2		Sandy Clay Loam
9+	B	2.5y 3/3		Clay Loam

HYDRIC SOIL INDICATORS:

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: <u>W087AA</u>	Rater(s): <u>R. Hook</u>	Date: <u>10/14/09</u>
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2	2
max 8 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (8 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.4 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input checked="" type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

20
subtotal this page

Site: W087AA Rater(s): R Hook Date: 10/14/09

20
subtotal first page

— 20
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 22
max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

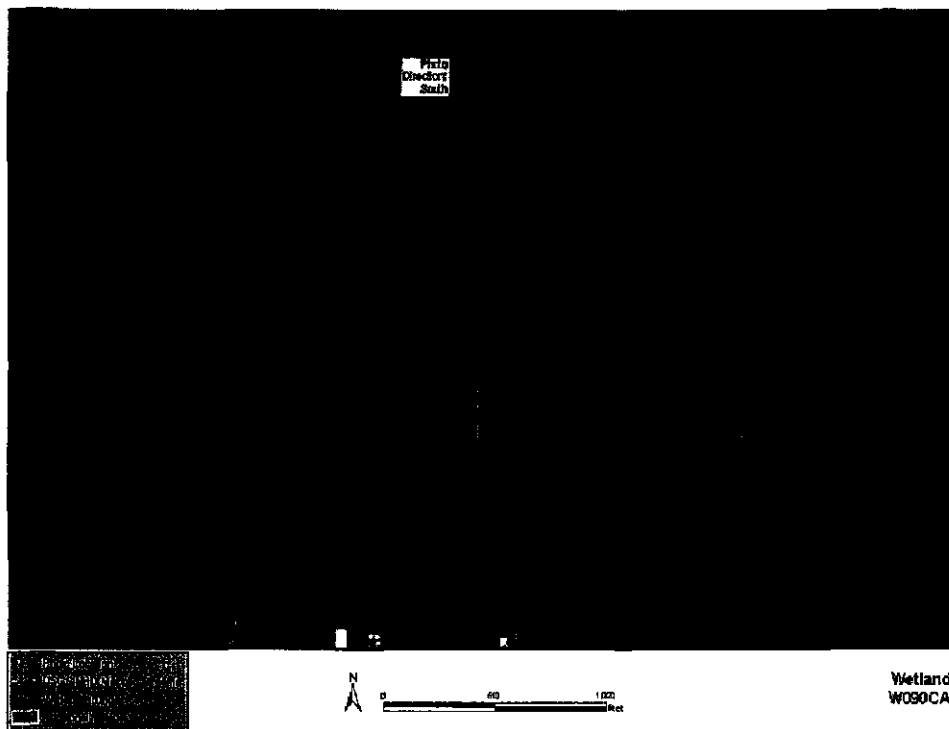
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

22 **GRAND TOTAL (max 100 pts)**



Wetland W090CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W090CA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC. / Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Latty
HUC 12 CODE: 041000071003	TOWNSHIP: Blue Creek	PHOTO No.: 089A50N & 089A51S	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	20 %
2. <i>Leersia oryzoides</i>	Herbaceous	Obligate	50 %
3. <i>Carex</i> sp.	Herbaceous	Fac Wet	10 %
4. <i>Typha latifolia</i>	Herbaceous	Obligate	30 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: 1 (in)		DEPTH TO SATURATED SOIL: 0 (in)	
DEPTH TO FREE WATER IN PIT: 0 (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Inundated	Saturated Upper 12in	Local Soil Survey	
Drainage Patterns		FAC Neutral Test	
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-2	A	10YR 5/1	2% 10YR 4/6
2-12+	B	10YR 5/1	20% 10YR 4/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silty Clay Loam			
Clay loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U090CA	
		ASSOCIATED WETLAND ID No: W090CA	
DATE: 09/17/2009		CLIENT/PROJECT NAME: Heartland Wind LLC. / Blue Creek Wind Farm	
INVESTIGATORS: D.West, M. Nechvatal		STATE/COUNTY: Ohio/Paulding	QUAD NAME: Latty
HUC 12 CODE: 041000071003		TOWNSHIP: Blue Creek	PHOTO No.: 090C46S
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Trifolium pratense	Herbaceous	Fac Up -	20 %
2. Poa sp.	Herbaceous	Fac Up	60 %
3. Taraxacum officinale	Herbaceous	Fac Up -	20 %
4.			%
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
no soil pit dug		no soil pit dug	
no soil pit dug			
HYDRIC SOIL INDICATORS:			
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? No			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

2 2

Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 3

Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8 15

Metric 3. Hydrology.

max 30 pts. subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☒ stormwater input

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally Inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

20 5

Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (8)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

20.5

subtotal 194 pts

Site: 1 096022	Rater(s): jlp, mlp, jlp	Date: 1/11/01
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max 10 pts subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☒ Emergent
- ☒ Shrub
- ☒ Forest
- ☒ Mudflats
- ☒ Open water
- ☒ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☒ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

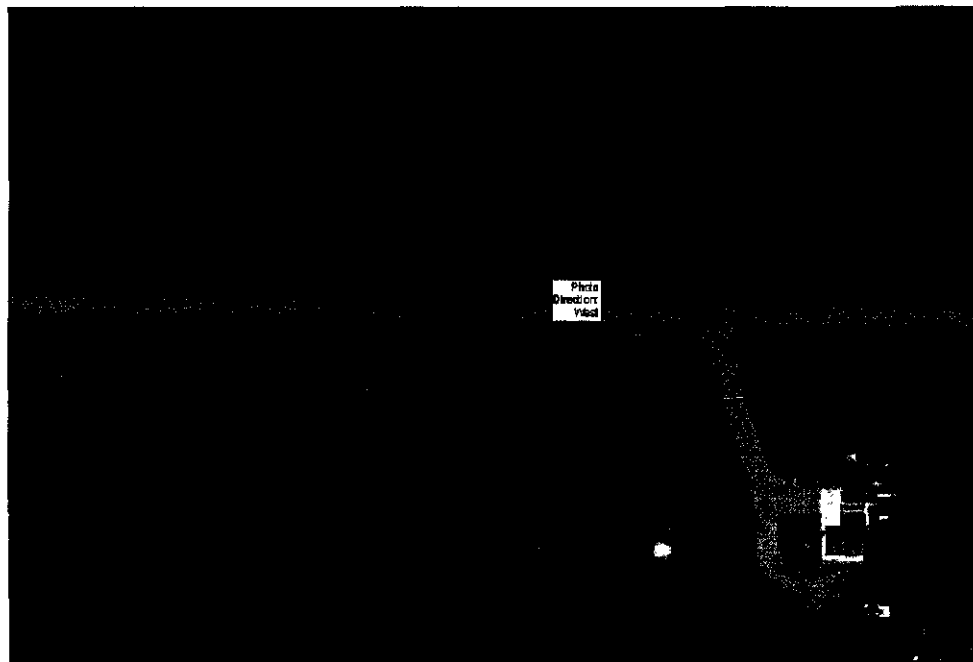
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

23.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM brochure for the scoring descriptions between wetland categories at the following address: <http://www.eqs.state.or.us/dmr/011401.htm>



☐ Photo Location
 USGS 1:50,000 Mapped Stream
☐ Wetland Boundary
 Additional Features

N

0 50 100 Feet

Wetland
W093CA



Wetland W093CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W093CA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D. West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Latty
HUC 12 CODE: 041000070703	TOWNSHIP: Blue Creek	PHOTO No.: 093C40W & 093C41E	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES		STRATUM	INDICATOR
1. <i>Scirpus atrovirens</i>		Herbaceous	Obligate
2. <i>Leersia oryzoides</i>		Herbaceous	Obligate
3. <i>Carex</i> sp.		Herbaceous	Fac Wet
4.			%
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to S			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: 2 (in)		DEPTH TO SATURATED SOIL: 0 (in)	
DEPTH TO FREE WATER IN PIT: 0 (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Inundated	Drift Lines	Local Soil Survey	
Drainage Patterns	Saturated Upper 12in	FAC Neutral Test	
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to S			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-2	A	10YR 5/2	5% 10YR 4/6
2-12+	B	10YR 5/1	45% 10YR 5/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt loam			
Silty Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed		
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U093CA	
		ASSOCIATED WETLAND ID No: W093CA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Latty	
HUC 12 CODE: 041000070703	TOWNSHIP: Blue Creek	PHOTO No.: 093C42E	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Trifolium pratense</i>	Herbaceous	Fac Up -	30 %
2. <i>Poa pratensis</i>	Herbaceous	Fac Up	50 %
3. <i>Taraxacum officinale</i>	Herbaceous	Fac Up -	20 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
no soil pit dug		no soil pit dug		
no soil pit dug				

HYDRIC SOIL INDICATORS:

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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

2	2
---	---

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1	3
---	---

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

5	15
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Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input checked="" type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

5	12
---	----

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

17

subtotal this page

Site: 123456789	Rater(s): 123456789	Date: 12/31/2012
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2

subtotal this page

0	0
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max 10 pts

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2	2
---	---

max 20 pts

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

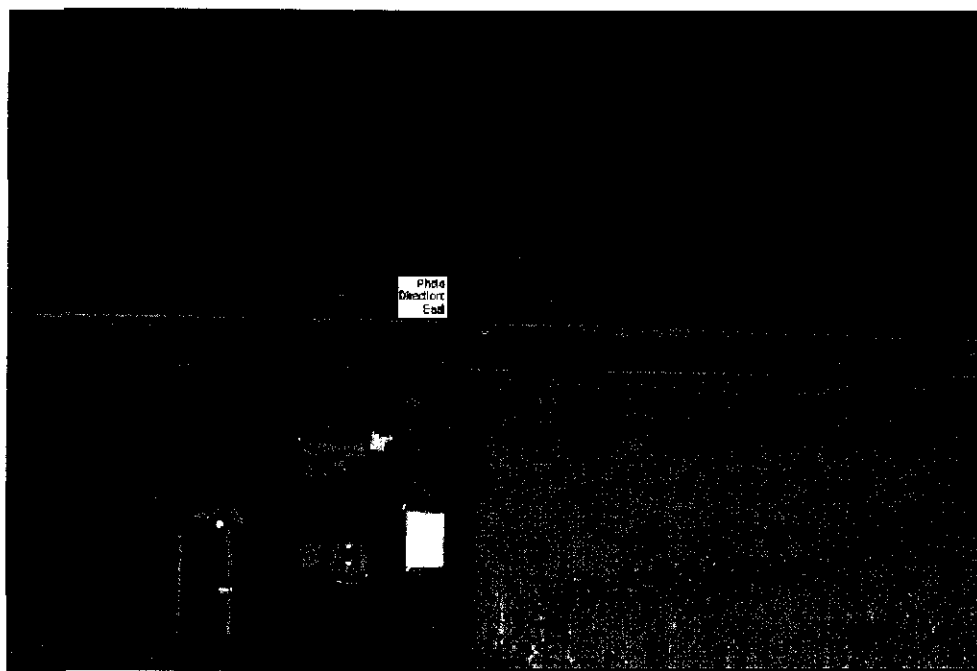
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19

GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Interpretation Report for the following: to each point between wetland categories at the following address: <http://www.epa.state.oh.us/databases/rams/114/01.html>

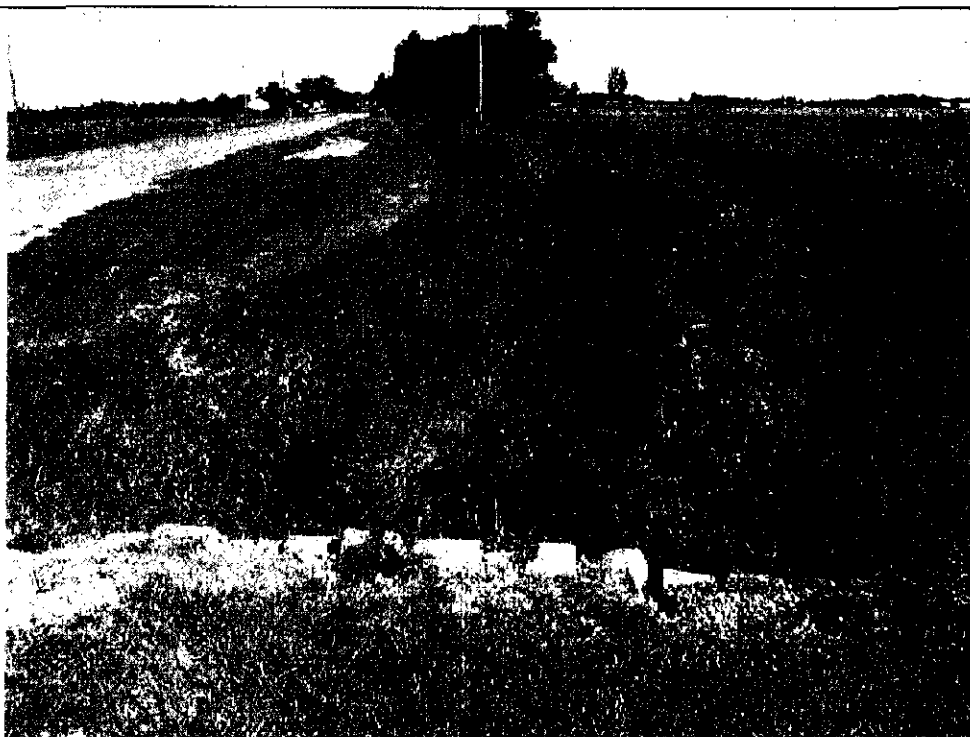


☐ Photo Location
☐ USGS NHD Mapped Streams
☐ Wetland Boundary
☐ Additional Feature



0 100 200 Feet

Wetland
W097AA



Wetland W097AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W097AA	
		ASSOCIATED STREAM ID No: S098CA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: 0	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	50 %
2. <i>Scirpus fluviatilis</i>	Herbaceous	Obligate	40 %
3. <i>Typha latifolia</i>	Herbaceous	Obligate	10 %
4. <i>Scirpus cyperinus</i>	Herbaceous	Fac Wet +	10 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: 1 (in)		DEPTH TO SATURATED SOIL: 0 (in)	
DEPTH TO FREE WATER IN PIT: 3 (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Inundated	Saturated Upper 12in	FAC Neutral Test	
Drainage Patterns			
REMARKS: roadside ditch			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-12+	B	5B 2.5/1	
HYDRIC SOIL INDICATORS:			
Sulfidic Odor	Listed Hydric	Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: W097AA/W085AA/W072CA Rater(s): R Hook Date: 9/17/09

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

6.7 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input type="checkbox"/> selective cutting	<input checked="" type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

20
subtotal this page

Site: W097AA/W085AA/W072CA Rater(s): R. Hook Date: 9/17/09

20

subtotal first page

20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 21

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 **GRAND TOTAL (max 100 pts)**

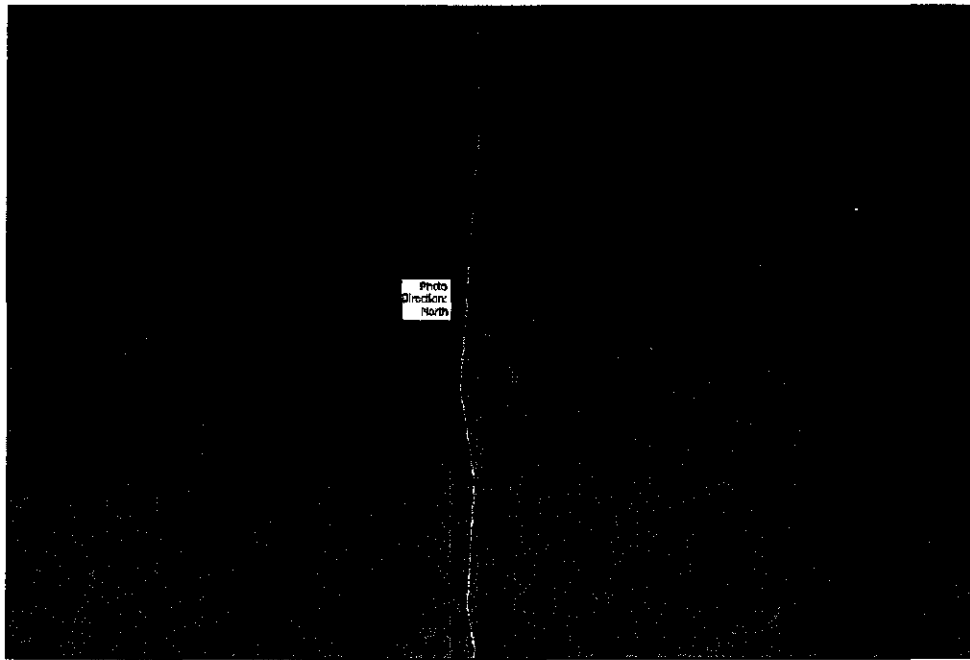


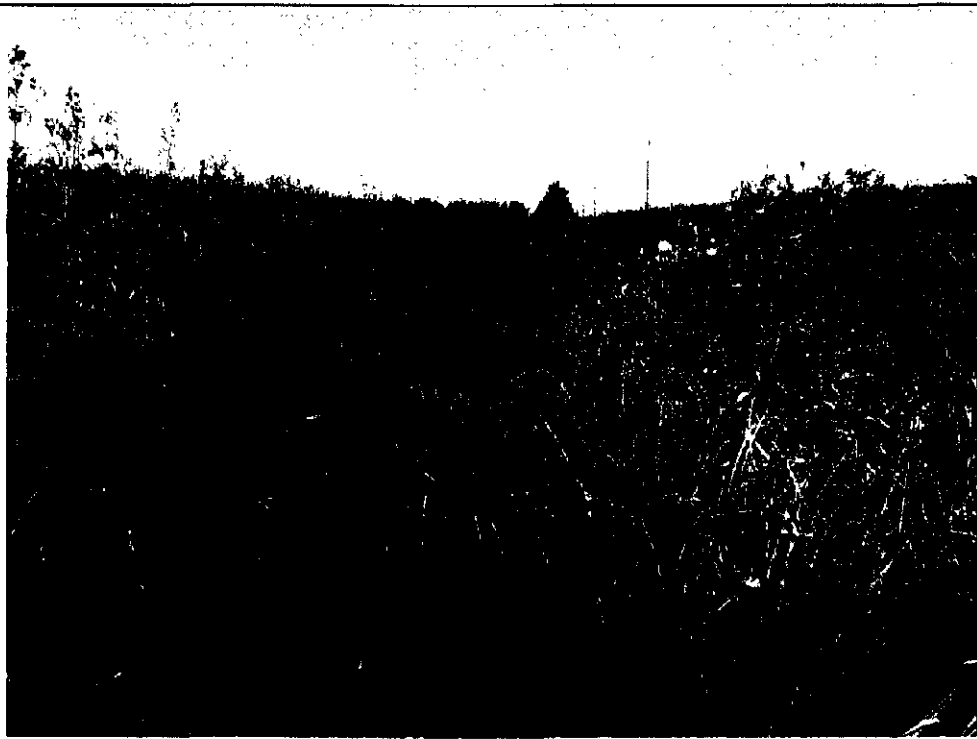
Photo
Direction:
North

○ Photo Location
UPDS NHD Mapped Stream
▬ Wetland Boundary
Additional Features

N

0 100 200 Feet

Wetland
W100CA



Wetland W100CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W100CA		
		ASSOCIATED STREAM ID NO: N/A		
DATE 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cof	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.: 0		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Leersia ooryzoides</i>	Herbaceous	Obligate	10 %	
2. <i>Scirpus fluviatilis</i>	Herbaceous	Obligate	70 %	
3.			%	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Saturated Upper 12in		FAC Neutral Test		
Drainage Patterns		Oxi Root Channels		
REMARKS: ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2	10YR 4/6 10%	Silt Loam
4+	B	10Y 4/1	10YR 4/6 20%	Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U100CA	
		ASSOCIATED WETLAND ID No: W100CA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/ Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Ambrosia trifida	Herbaceous	Fac	30 %
2. Apocynum cannabinum	Herbaceous	Fac Up	30 %
3. Solidago canadensis	Herbaceous	Fac Up	30 %
4.			%
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 30			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-12+	A	2.5y 4/3	Silt Loam
HYDRIC SOIL INDICATORS:			
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? No			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: W100CA	Rater(s): R. Hook	Date: 9/17/09
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1.5 acres

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	11
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other

6	17
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

17

subtotal this page

Site: **W100 CA** Rater(s): **T2 Hook** Date: **9/17/09**

17

subtotal first page

- **17**

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 **20**

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

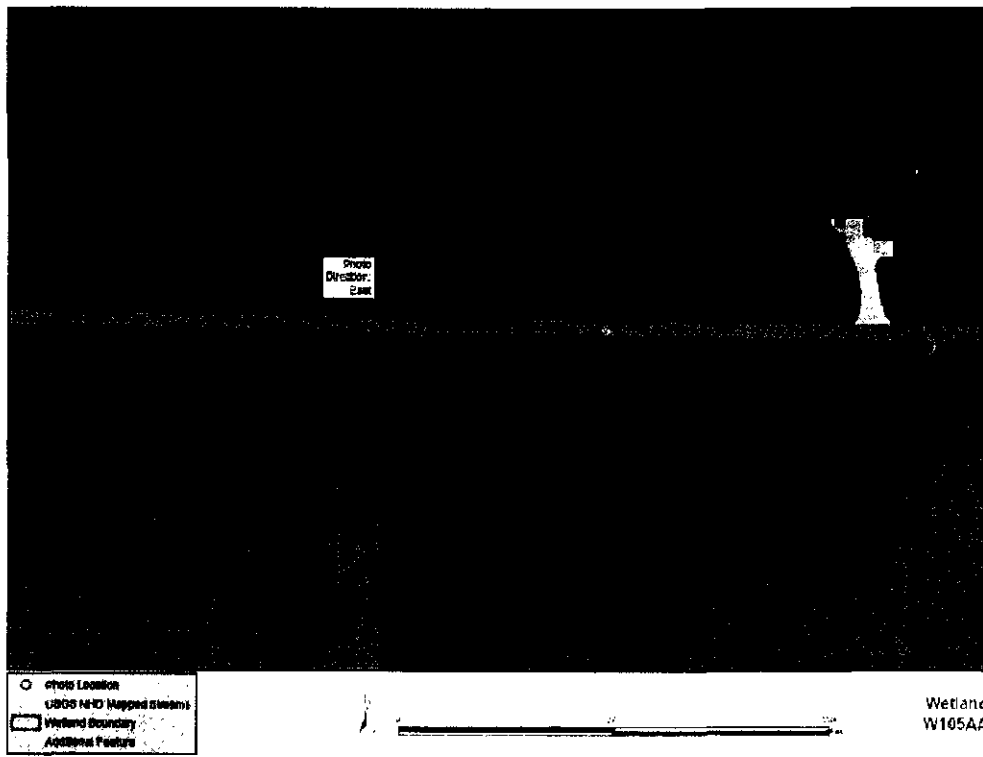
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20 **GRAND TOTAL (max 100 pts)**



Wetland W105AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W105AA		
		ASSOCIATED STREAM ID NO: N/A		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott	
HUC12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.: 0		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	95 %	
2.			0 %	
3.			0 %	
4.			0 %	
5.			0 %	
6.			0 %	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN FT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks				
REMARKS: roadside ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-9	A	5Y 3/1	7.5YR 4/4.5%	Silt Loam
9+	B	5GY 2.5/2		Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric	Gleyed			
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W105AA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/20/09</u>
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.32

1	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	12
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	19
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

19
subtotal this page

Site: W105AA Rater(s): R Hook Date: 9/20/09

19

subtotal first page

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

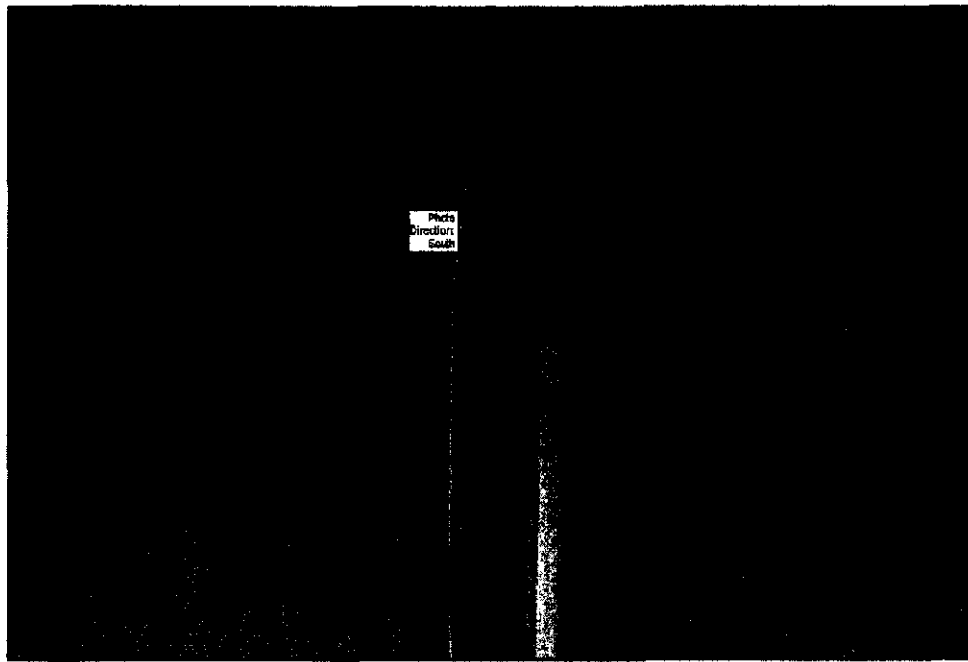
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 GRAND TOTAL (max 100 pts)

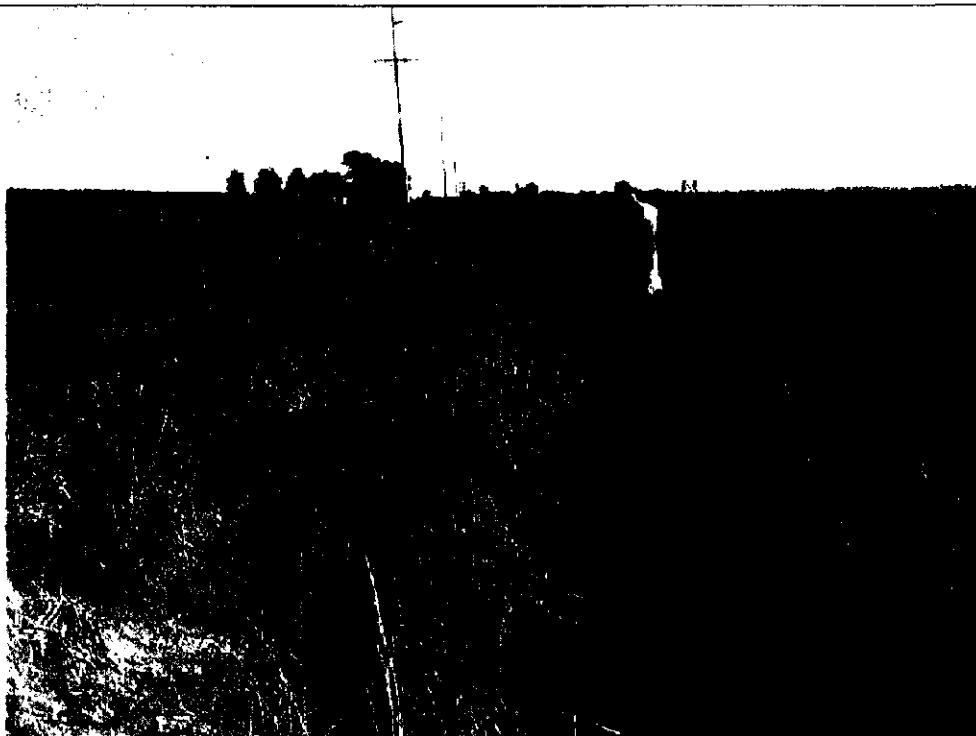


☐ Photo Location
 USGS NHD Mapped Stream
☐ Wetland Boundary
 Additional Feature



0 100 200 feet

Wetland
W110CA



Wetland W110CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W110CA		
		ASSOCIATED STREAM ID No: N/A		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cof	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	60 %	
2. <i>Scirpus cyperinus</i>	Herbaceous	Obligate	10 %	
3. <i>Typha angustifolia</i>	Herbaceous	Obligate	20 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PTT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drift Lines		Local Soil Survey		
Water Marks		FAC Neutral Test		
REMARKS: ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-2	A	10YR 5/2		Silty Clay Loam
2-8	B	10YR 4/1	7.5YR 5/6 30%	Clay Loam
Rock Refusal				
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WELMCB/WIOCA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/17/09</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

2.3 acres

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other |

5	18
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

18
subtotal this page

Site: WELMCB/W110CA Rater(s): R. Hook Date: 9/17/09

18

subtotal first page

18

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

19

max 20 pts.

subtotal

Metric 6. Plant communities, Interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

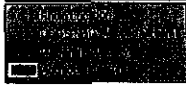
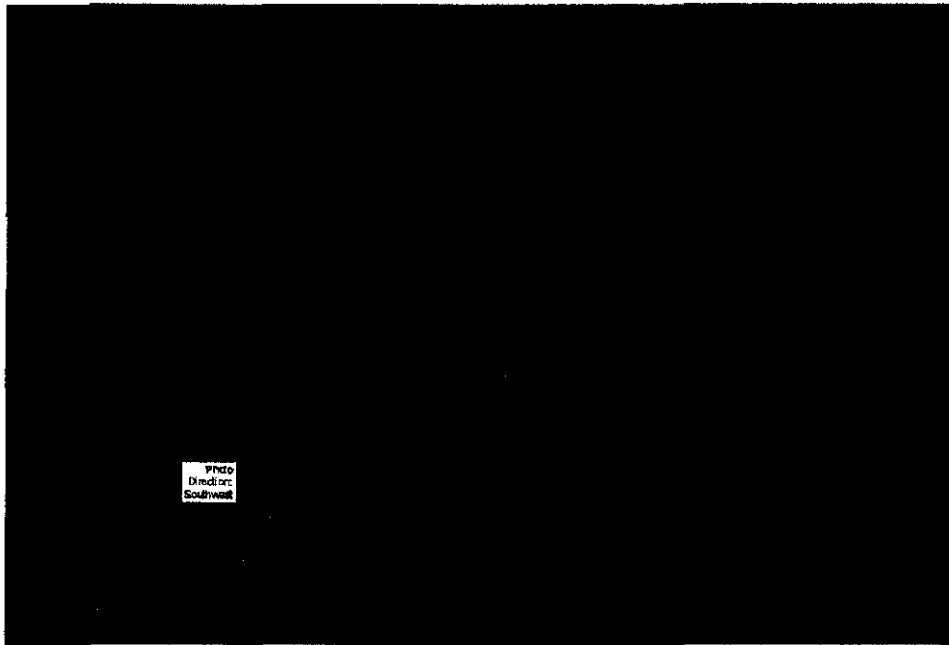
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

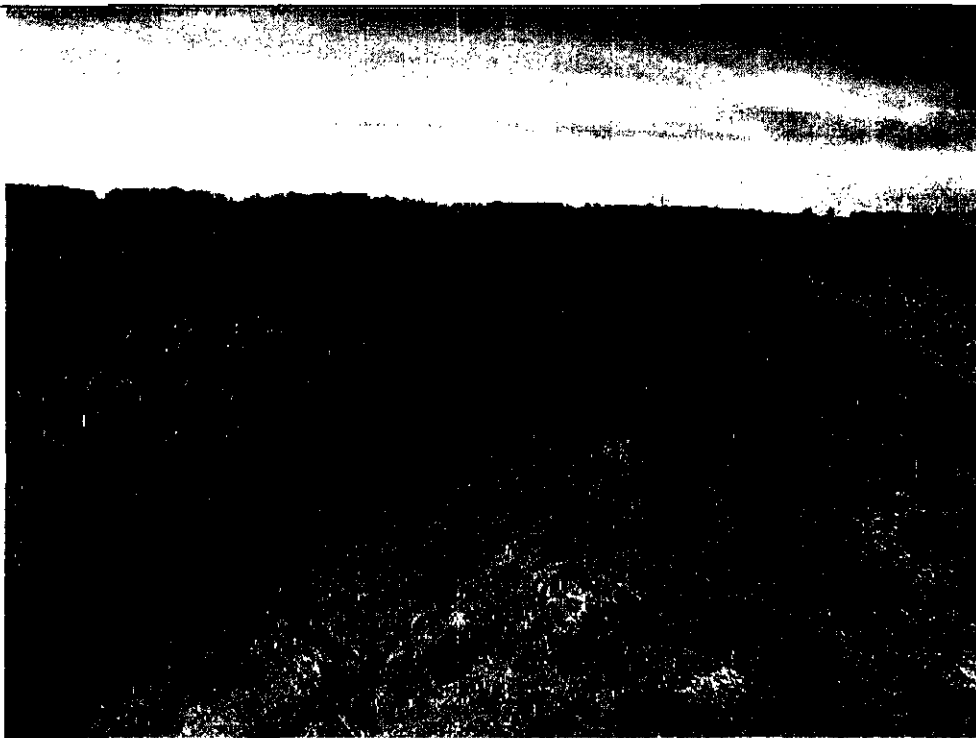
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 GRAND TOTAL (max 100 pts)



Wetland
W119CA



Wetland W119CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W119CA	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 09/19/2009	CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio / Van Wert	ROVER FILE: RAH090919B.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.: w119ca	
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES		STRATUM	INDICATOR
1. <i>Scirpus fluviatilis</i>		Herbaceous	Obligate
2. <i>Typha latifolia</i>		Herbaceous	Obligate
3. <i>Leersia oryzoides</i>		Herbaceous	Obligate
4. <i>Polygonum sp</i>		Herbaceous	Fac Wet
5. <i>Scirpus validus</i>		Herbaceous	Obligate
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: ag drainage			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Drainage Pattern		FAC Neutral Tes	
Drift Lines		Local Soil Survey	
REMARKS: ag drainage			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-3	B	2.5Y 4/2	10YR 4/6 10%
4+	C	10YR 4/1	10YR 4/3 20%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: <u>W119.CA</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/19/09</u>
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3	3
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☒ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

4.5 acre

1	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11	15
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|--|
| <input checked="" type="checkbox"/> ditch
<input type="checkbox"/> tile
<input type="checkbox"/> dike
<input type="checkbox"/> weir
<input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> filling/grading
<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> dredging
<input type="checkbox"/> other |
|---|--|

8	23
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (8)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| <input type="checkbox"/> mowing
<input type="checkbox"/> grazing
<input type="checkbox"/> clearcutting
<input type="checkbox"/> selective cutting
<input type="checkbox"/> woody debris removal
<input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> dredging
<input type="checkbox"/> farming
<input type="checkbox"/> nutrient enrichment |
|--|---|

23

subtotal this page

Site: <u>W119 CA</u>	Rater(s): <u>Z Hook</u>	Date: <u>9/19/09</u>
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23

subtotal first page

-	23
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (~10)

3	26
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflat
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (6)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-6)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

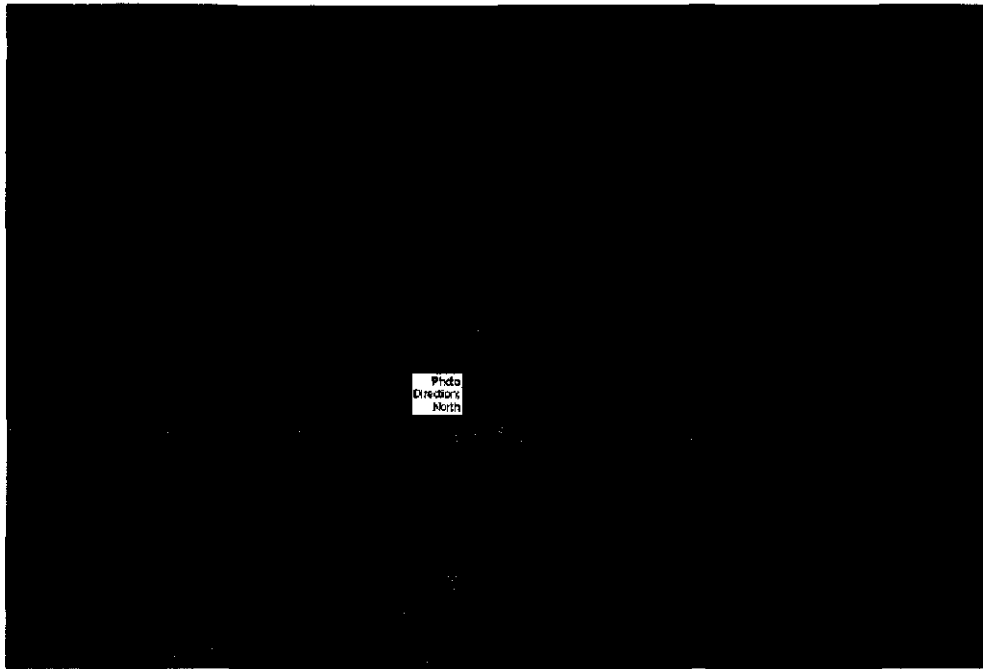
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

26	GRAND TOTAL (max 100 pts)
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○ Photo Location
USGS NHD Mapped Stream
Wetland Boundary
Additional Feature



0 100 200 Feet

Wetland
W122AA



Wetland W122AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W122AA	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 09/19/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH090919B.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.: 122a1	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES		STRATUM	INDICATOR
1. Glycine max		Herbaceous	Upland
2.			
3.			
4.			
5.			
6.			
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0			
VEGETATION REMARKS: farmed wetland, mostly bare			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN FTT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Drift Lines		Other	
Sediment Deposits		Local Soil Survey	
REMARKS: farmed wetland, suppressed crop			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-8	A	10Y5 3/2	10YR 4/6 10%
8+	B	10YR 4/1	10YR 4/4 20%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Silty Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? No		SIGNIFICANTLY DISTURBED? Yes	POTENTIAL PROBLEM AREA? Yes
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site:

Rater(s):

Date:

0	0
max 5 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

max 14 pts	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

9	10
max 30 pts	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☒ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input

- ☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other

13	
max 20 pts	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
☐ Recovered (3)
☐ Recovering (2)
☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (5)
☐ Good (3)
☐ Moderately good (4)
☐ Fair (3)
☐ Poor to fair (2)
☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☐ Recovered (6)
☐ Recovering (3)
☒ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants

- ☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☒ dredging
☐ farming
☐ nutrient enrichment

subtotal this page

Site: _____	Rater(s): _____	Date: _____
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1

subtotal this page

0	0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (~10)

1	1
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersion

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☒ Coarse woody debris >15cm (6in)
- ☒ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High >4ha (9.88 acres) or more

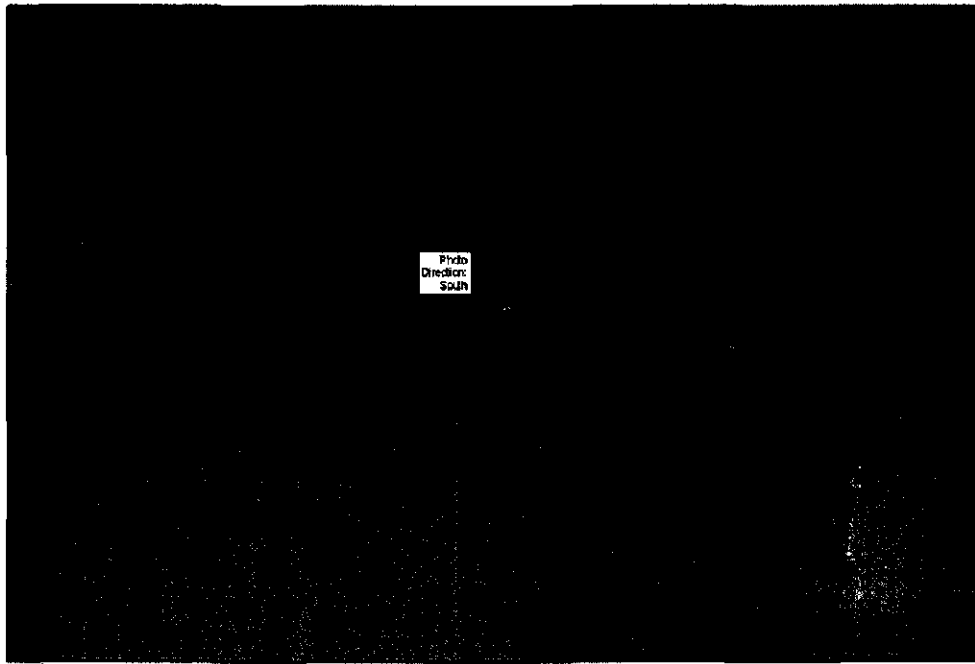
Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

14

GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calculation Report for the scoring break points between wetland categories at the following address: <http://www.epa.state.nh.us/bsw/10/101.html>



○ Photo Location
 USGS NHD Mapbox Stream
 Wetland Boundary
 Additional Features



0 100 200 Feet

Wetland
W136CA



Wetland W136CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W136CA		
		ASSOCIATED STREAM ID No: S136CA		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Zea mays	Herbaceous	Upland	20 %	
2. Abutilon theophrasti	Herbaceous	Upland	5 %	
3. Glycine max	Herbaceous	Upland	20 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, or FAC (EXCLUDING FAC-): 0				
VEGETATION REMARKS: farmed, mostly bare soil				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN FT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drift Lines		Local Soil Survey		
REMARKS: farmed, suppressed crop, rutted				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2		Silt Loam
4+	B	2.5Y 5/1	7.5Y 5/6 30%	Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? No		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? Yes	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W0136CA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/12/09</u>
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max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">1</div>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">7</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">8</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☒ other farming/till

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max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☒ farming
- ☐ nutrient enrichment

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subtotal this page

Site: W0136CA	Rater(s): R Hook	Date: 9/18/09
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11

subtotal first page

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11

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1

12

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

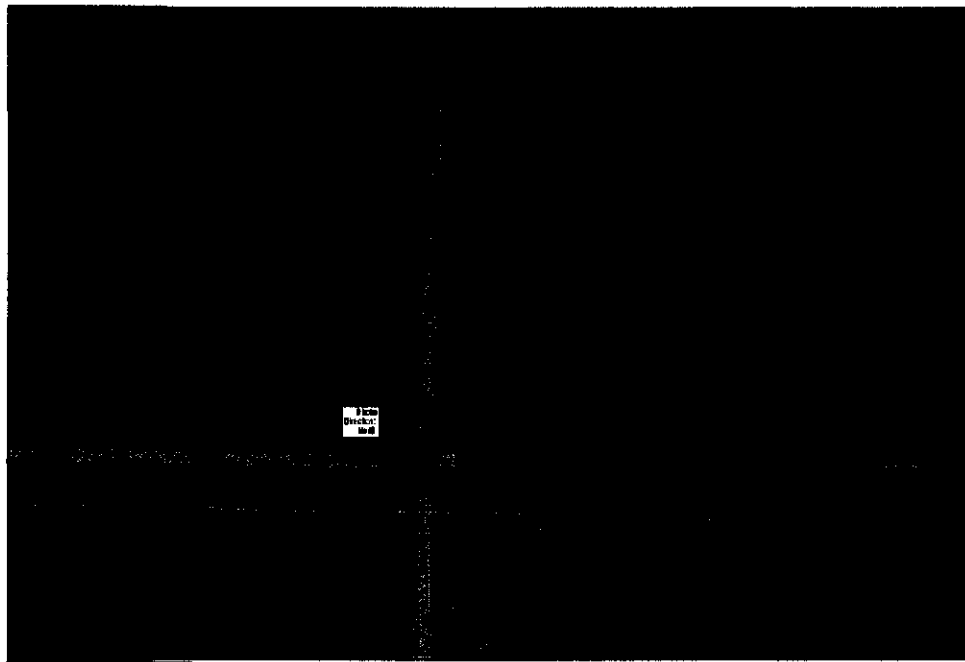
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

12

GRAND TOTAL (max 100 pts)



Wetland
W142CA



Wetland W142CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W142CA		
		ASSOCIATED STREAM ID NO: N/A		
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm			
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Latty	
HUC 12 CODE: 041000070703	TOWNSHIP: Blue Creek	PHOTO NO.: 142C17N & 142C18W		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	10 %	
2. <i>Leersia oryzoides</i>	Herbaceous	Obligate	20 %	
3. <i>Typha latifolia</i>	Herbaceous	Obligate	50 %	
4. <i>Scirpus validus</i>	Herbaceous	Obligate	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W & S				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: 0 (in)		
DEPTH TO FREE WATER IN PIT: 3 (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drainage Patterns		Local Soil Survey		
Saturated Upper 12in		FAC Neutral Test		
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W & S				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-2	A	10YR 4/2	No mottles	Silt loam
2-12+	B	2.5YR 4/1	10% 10YR 6/6	Silt loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: **W142CA**

Rater(s): **R Hook**

Date: **9/17/09**

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (8 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ treading
- ☐ farming
- ☐ nutrient enrichment

20

subtotal this page

Site: W142CA Rater(s): R Hook Date: 7/17/09

20

subtotal first page

- 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 23

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

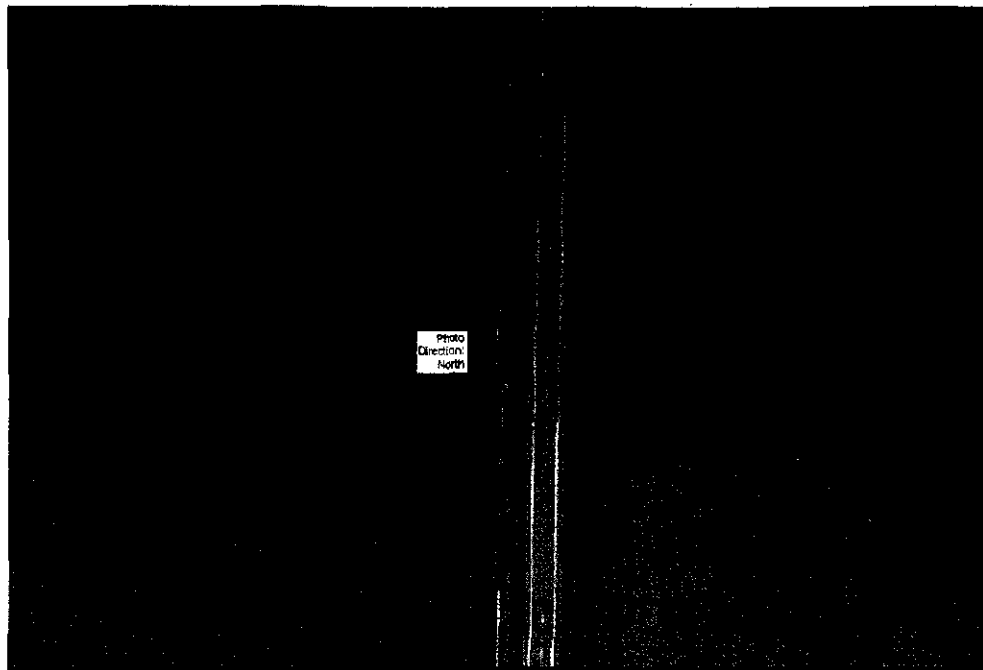
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

23 GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapped Streams
☐ Wetland Boundary
☐ Additional Feature



0 100 200 Feet

Wetland
W147CA



Wetland W147CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W147CA		
		ASSOCIATED STREAM ID No: N/A		
DATE 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091709ADW.cor	QUAD NAME: Latty	
HUC 12 CODE: 041000070703	TOWNSHIP: Blue Creek	PHOTO No.: 147C4N & 147C5S		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES		STRATUM	INDICATOR	
1. <i>Scirpus atrovirens</i>		Herbaceous	Obligate	
2. <i>Leersia oryzoides</i>		Herbaceous	Obligate	
3. <i>Typha angustifolia</i>		Herbaceous	Obligate	
4.				
5.				
6.				
			PERCENT COVER	
			10 %	
			20 %	
			70 %	
			%	
			%	
			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drainage Patterns		Local Soil Survey		
		FAC Neutral Test		
REMARKS: roadside ditch; linear wetland, drainage for adj ag field to W				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-6	A	10YR 5/2	5% 5YR 4/4	Silt loam
6-12+	B	10YR 5/1	45% 10YR 5/6	Silty Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: U147CA	
		ASSOCIATED WETLAND ID NO: W147CA	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M. Nechvatal	STATE/COUNTY: Ohio/Paulding	QUAD NAME: Latty	
HUC 12 CODE: 041000070703	TOWNSHIP: Blue Creek	PHOTO NO.: 147C6N	
WETLAND QUALITY: N/A		WETLAND TYPE N/A SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Trifolium pratensis	Herbaceous	Fac Up -	20 %
2. Poa pratensis	Herbaceous	Fac Up	30 %
3. Coreopsis sp.	Herbaceous	Fac Up	30 %
4. Taraxacum officinale	Herbaceous	Fac Up -	20 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
no soil pit dug		no soil pit dug	
no soil pit dug			
HYDRIC SOIL INDICATORS:			
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? No			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED? No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

2 2

Metric 1. Wetland Area (size).

max 6 pts

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

3

Metric 2. Upland buffers and surrounding land use.

max 14 pts

subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

11.5

Metric 3. Hydrology.

max 20 pts

subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☒ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

20.5

Metric 4. Habitat Alteration and Development.

max 20 pts

subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

20.5

subtotal this page

Site: 101	Rater(s): Jim	Date: 1/2/01
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max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 GRAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

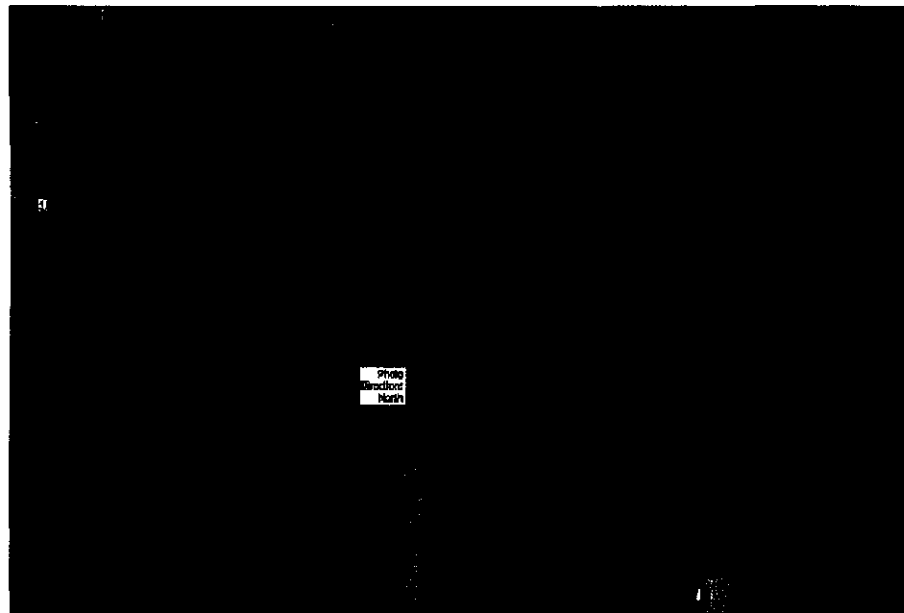
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

235 GRAND TOTAL(max 100 pts)



Wetland W150CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W150CA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: 0	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Scrub Shrub	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Cornus amomum	Shrub	Fac Wet	70 %
2. Carex sp.	Herbaceous	Fac Wet	30 %
3. Salix nigra	Shrub	Fac Wet +	10 %
4. Lysimachia nummularia	Herbaceous	Obligate	20 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch			
HYDROLOGY			
RECORDED DATA?	DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Water Marks	FAC Neutral Test		
Drainage Patterns	Other		
REMARKS: roadside ditch			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-4	A	10YR 2/2	
4+	B	2.5Y 4/1	10YR 4/6
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed		
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: <u>WISOCA</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/17/09</u>
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<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">0</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">0</div>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

0.02 acres

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">4</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">4</div>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">12</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">16</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">12</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">28</div>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">28</div>

subtotal this page

Site: W150 CA	Rater(s): R. Hook	Date: 9/17/09
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28

subtotal first page

-	28
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3

31

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-3)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

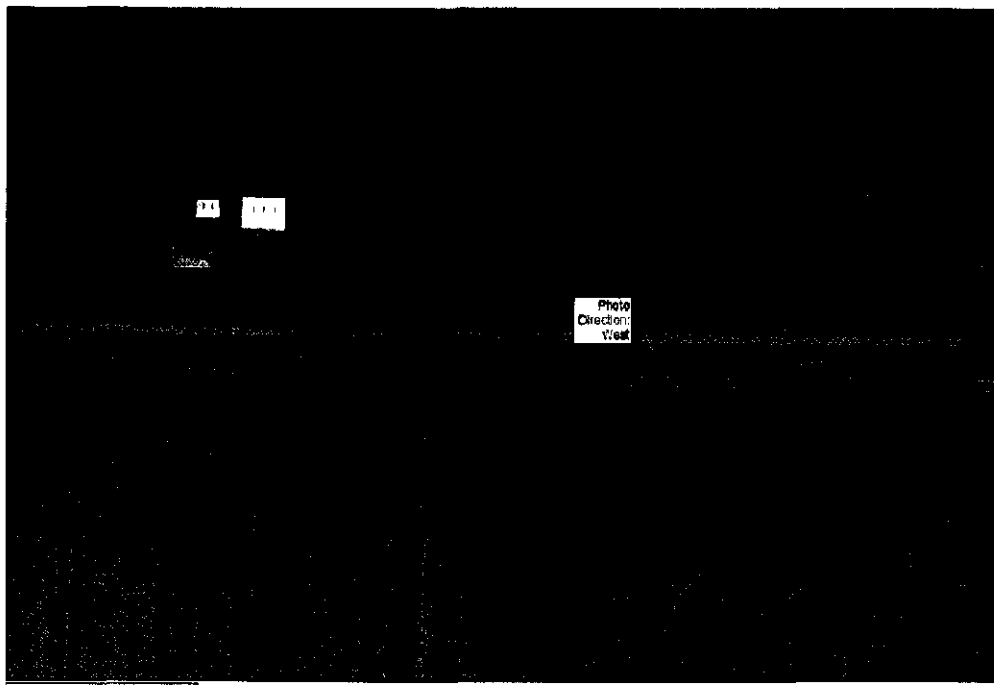
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

31

GRAND TOTAL (max 100 pts)



Wetland W151AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W151AA		
		ASSOCIATED STREAM ID No: N/A		
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091609A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Hoaglin	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Alisma subcordatum</i>	Herbaceous	Obligate	10 %	
2. <i>Leersia oryzoides</i>	Herbaceous	Obligate	50 %	
3. <i>Scirpus validus</i>	Herbaceous	Obligate	10 %	
4. <i>Echinochloa muricata</i>	Herbaceous	Fac Wet +	20 %	
5. <i>Eleocharis obtusa</i>	Herbaceous	Obligate	10 %	
6. <i>Scirpus</i> sp.	Herbaceous	Fac Wet	10 %	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, or FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks		Oxi Root Channels		
REMARKS: roadside ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-9	A	5Y 3/1	7.5YR 4/4.5%	Silt Loam
9+	B	5GY 2.5/2	Oxidized Rhizospheres	Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U151AA	
		ASSOCIATED WETLAND ID No: W151AA	
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Hoaglin	PHOTO No.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	
PLANT SPECIES		STRATUM	INDICATOR
1. <i>Daucus carota</i>		Herbaceous	Upland
2. <i>Trifolium repens</i>		Herbaceous	Fac Up -
3. <i>Festuca sp.</i>		Herbaceous	Fac Up
4. <i>Plantago anceolara</i>		Herbaceous	Fac Up
5.			
6.			
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very Poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-9	A	10yr 3/4	
9+	B	10yr 4/2	10yr 5/6 30%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Silty Clay Loam			
HYDRIC SOIL INDICATORS:			
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: Yes	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: W0151AA	Rater(s): R Hook	Date: 9/16/09
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	11
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other

4	15
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

15

subtotal this page

Site: W0157AA Rater(s): Rthook Date: 9/16/09

15

subtotal first page

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 17

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (8in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

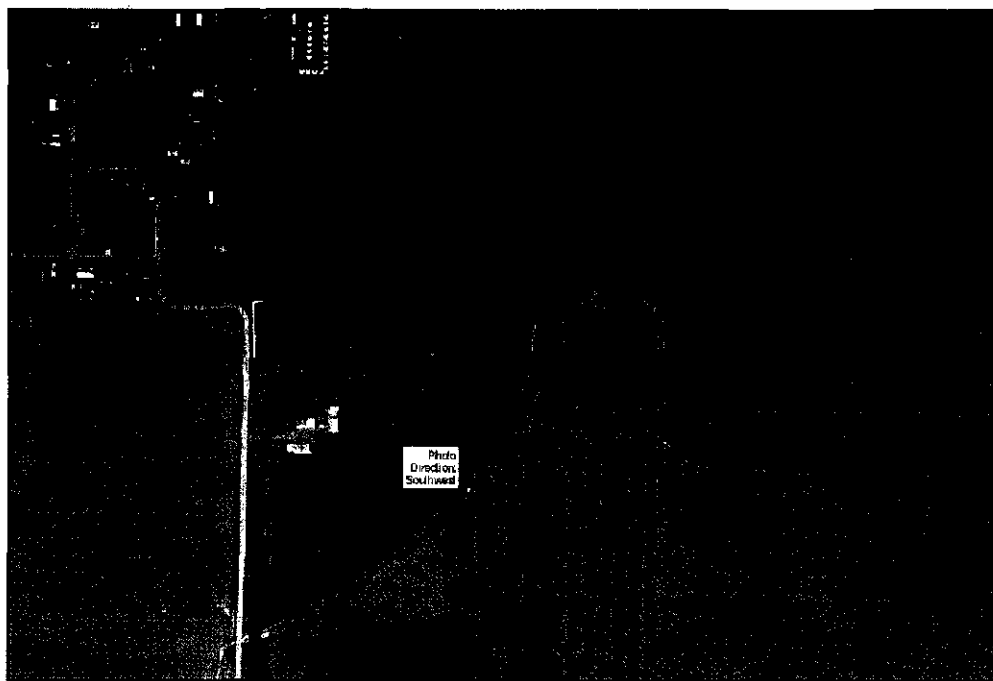
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 8.88 acres)
3	High 4ha (8.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

17 GRAND TOTAL (max 100 pts)



Wetland
W151CA



Wetland W151CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm

WETLAND ID No.: W151CA

ASSOCIATED STREAM ID No: N/A

DATE: 09/17/2009

CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm

INVESTIGATORS: Hook

STATE/COUNTY: Ohio/Van Wert

ROVER FILE: RAH091709A.cor

QUAD NAME: Scott

HUC 12 CODE: 041000070703

TOWNSHIP: Union

PHOTO No.: 0

WETLAND QUALITY: Low

WETLAND TYPE: Palustrine
SUBTYPE: Emergent

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Typha latifolia</i>	Herbaceous	Obligate	30 %
2. <i>Leersia oryzoides</i>	Herbaceous	Obligate	50 %
3. <i>Scirpus validus</i>	Herbaceous	Obligate	20 %
4. <i>Ludwigia palustris</i>	Herbaceous	Obligate	30 %
5. <i>Typha angustifolia</i>	Herbaceous	Obligate	20 %
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FAC-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: dry creek channel

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: >16 (in)

DEPTH TO FREE WATER IN PIT: None (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

Water Marks

FAC Neutral Test

Drainage Patterns

Oxi Root Channels

REMARKS: dry creek channel

SOILS

MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12+	B	10YR 4/1	10YR 4/6 25%	Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric

Gleyed

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes

IS THIS SAMPLING POINT WITHIN A WETLAND? Yes

WETLAND HYDROLOGY PRESENT? Yes

IS THIS AN ISOLATED WETLAND? No

HYDRIC SOILS PRESENT? Yes

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED: No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U151CA		
		ASSOCIATED WETLAND ID No: W151CA		
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Festuca rubra	Herbaceous	Fac Up	50 %	
2. Daucus carota	Herbaceous	Upland	10 %	
3. Bromus inermis	Herbaceous	Upland	20 %	
4. Hibiscus trionum	Herbaceous	Upland	20 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very Poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12	A	10yr 3/3		Silt Loam
12+	B	10yr 3/3		Silt Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? No				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED? No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WISICA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/17/09</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 60m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

6	19
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

19

subtotal this page

Site: W151 CA Rater(s): HOC Date: 9/16/09

19

subtotal first page

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☒ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

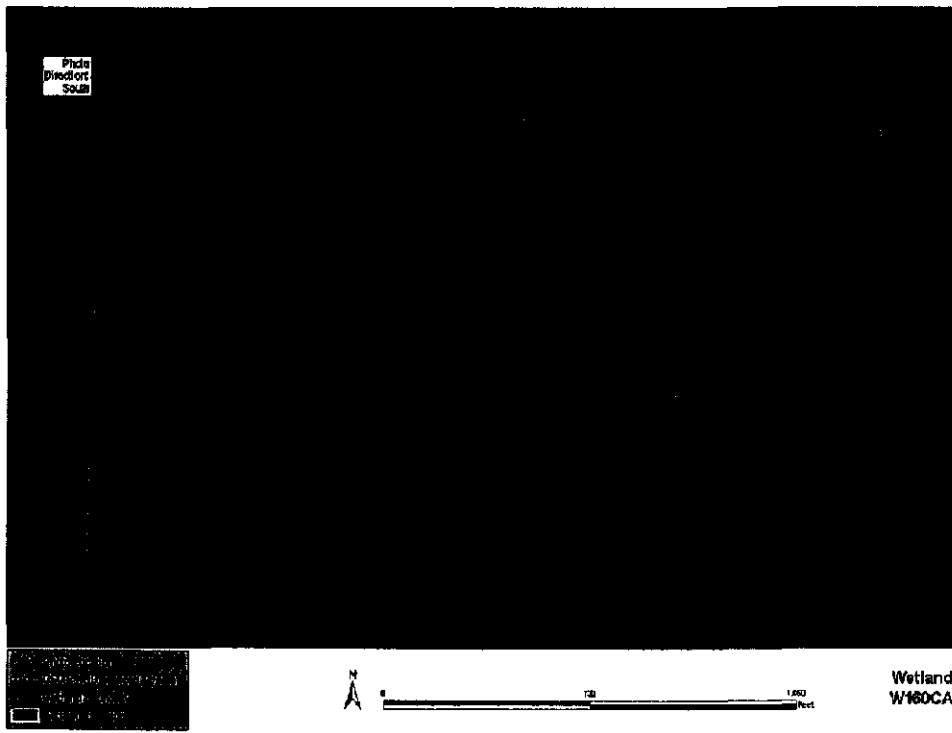
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20 GRAND TOTAL (max 100 pts)



Wetland W160CA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W160CA	
		ASSOCIATED STREAM ID No: S160CA	
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: D.West, M.Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091609ADW.cor	QUAD NAME: Latty
HUC 12 CODE: 041000070701	TOWNSHIP: Latty	PHOTO No.: 160C1W, 160C2E	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	40 %
2. <i>Polygonum pennsylvanicum</i>	Herbaceous	Fac Wei	30 %
3. <i>Typha angustifolia</i>	Herbaceous	Obligate	40 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: Roadside ditch, parallel to existing road, perpendicular to collector line, flows into S160CA

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: 0 (in)
DEPTH TO FREE WATER IN PIT: 0	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
Drainage Patterns	FAC Neutral Test
Saturated Upper 12in	Local Soil Survey
REMARKS: Roadside ditch, parallel to existing road, perpendicular to collector line, flows into S160CA	

SOILS

MAP UNIT NAME (SERIES AND PHASE): Wabasha silty clay loam, moderately shallow	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-7	A	10YR 5/2	10% 5YR 4/4	Silt Loam
7-12+	B	10YR 5/1	40% 10YR 5/6	Silty Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric	Gleyed
---------------	--------

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes	IS THIS SAMPLING POINT WITHIN A WETLAND? Yes
WETLAND HYDROLOGY PRESENT? Yes	IS THIS AN ISOLATED WETLAND? No
HYDRIC SOILS PRESENT? Yes	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: WILCOCARater(s): Richard W. HargroveDate: 1/2/200122**Metric 1. Wetland Area (size).**

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

13**Metric 2. Upland buffers and surrounding land use.**

max 14 pts.

subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7.511.5**Metric 3. Hydrology.**

max 30 pts.

subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
☒ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
☐ tile
☐ dike
☐ weir
☒ stormwater input
☐ point source (nonstormwater)
☐ filling/graveling
☐ road bed/RR track
☐ dredging
☐ other _____

20.520.5**Metric 4. Habitat Alteration and Development.**

max 20 pts.

subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
☒ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
☒ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

20.5

subtotal this page

Site: <u>W160</u>	Rater(s):	Date:
-------------------	-----------	-------

SWITCH THE PAGE

0

1

max 10 pts
vegetal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

SWITCH THE PAGE

0

1

max 20 pts
vegetal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris > 15cm (6in)
- ☐ Standing dead > 25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

25 GRAND TOTAL (max 100 pts)

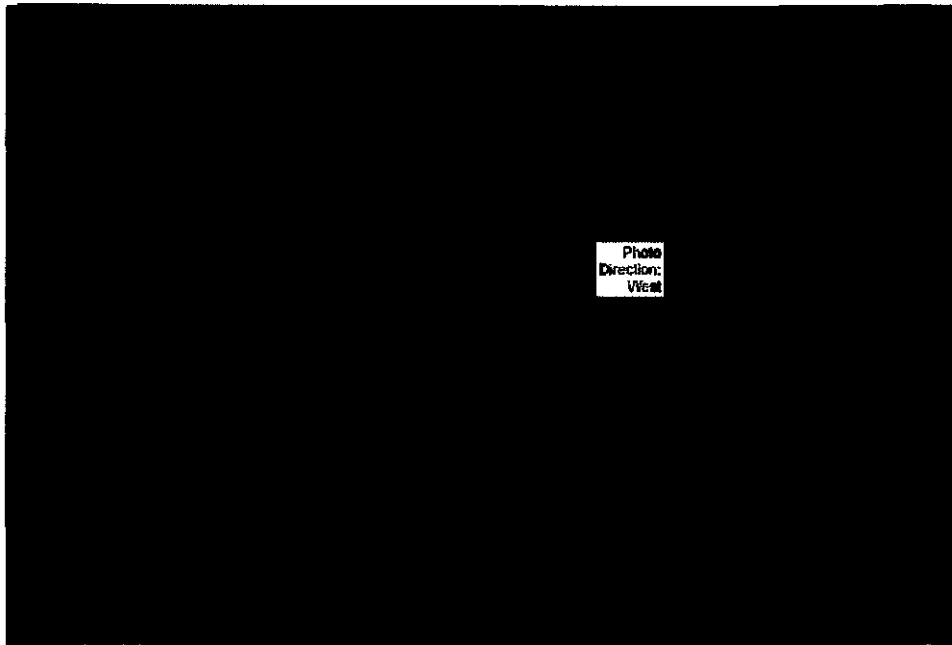


Photo
Direction:
West



N



Wetland
W167AA



Wetland W167AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: W167AA		
		ASSOCIATED STREAM ID NO: N/A		
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: D.West, M.Nechvatal	STATE/COUNTY: Ohio/Paulding	ROVER FILE: R091609ADW.corr	QUAD NAME: Latty	
HUC12 CODE: 041000070702	TOWNSHIP: Latty	PHOTO NO.: 167A1W, 167A2E		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Scirpus validus</i>	Herbaceous	Obligate	10 %	
2. <i>Echinochloa muricata</i>	Herbaceous	Fac Wet +	20 %	
3. <i>Scirpus lineatus</i>	Herbaceous	Unknown	50 %	
4. <i>Carex</i> sp.	Herbaceous	Fac Wet	40 %	
5. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	10 %	
6. <i>Polygonum pennsylvanica</i>	Herbaceous	FACW	10 %	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: Roadside ditch, parallel to existing road, perpendicular to access rd				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drainage Patterns		PAC Neutral Test	Other	
		Local Soil Survey		
REMARKS: Roadside ditch, parallel to existing road, perpendicular to access rd				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-7	A	10YR 4/2	20% 5YR 4/4	Silt Loam
7-12+	B	10YR 5/1	10% 5YR 4/4	Silty Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

2 2

Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 3

Metric 2. Upland buffers and surrounding land use.

max 14 pts.

subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8 5 11 5

Metric 3. Hydrology.

max 30 pts.

subtotal

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depths. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☒ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

6 5 18

Metric 4. Habitat Alteration and Development.

max 20 pts.

subtotal

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (5)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☒ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

18

subtotal this page

Site: W167AP Rater(s): Matthew DeGroot Date: 9/10

2

subtotal this page

0 0

max 10 pts

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 2

max 20 pts

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☒ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20

GRAND TOTAL(max 100 pts)

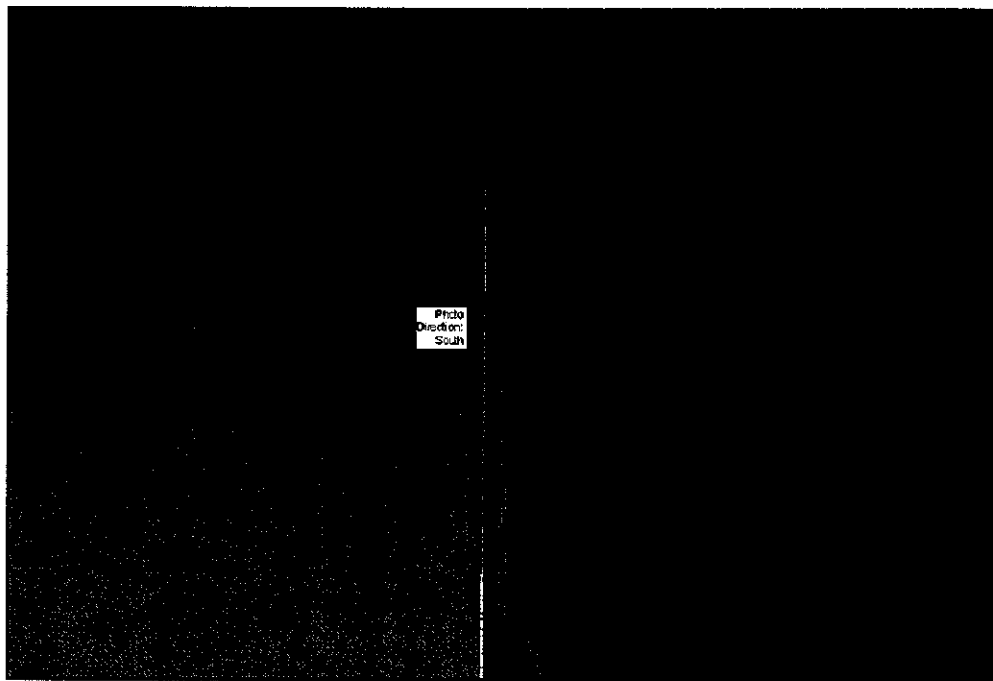


Photo Location
 USGS NHD Mapped Streams
 Wetland Boundary
 Additional Feature



0 100 200 Feet

Wetland
W168AA



Wetland W168AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: W168AA		
		ASSOCIATED STREAM ID No: N/A		
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091609A.cor	QUAD NAME: Scott	
HUC12 CODE: 041000070701	TOWNSHIP: Hoaglin	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Lycopus americana</i>	Herbaceous	Obligate	10 %	
2. <i>Leersia oryzoides</i>	Herbaceous	Obligate	50 %	
3. <i>Alisma subcordatum</i>	Herbaceous	Obligate	10 %	
4. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	10 %	
5. <i>Penthorum sedoides</i>	Herbaceous	Obligate	20 %	
6. <i>Ludwigia palustris</i>	Herbaceous	Obligate	50 %	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: roadside ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks		Oxi Root Channels		
Drainage Patterns				
REMARKS: roadside ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-2	O	7.5YR 3/1	Oxidized Rhizospheres	Silt Loam
2+	C	10YR 5/2	10YR 5/8 2%	Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: U168AA		
		ASSOCIATED WETLAND ID No: W168AA		
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC12 CODE: 041000070701	TOWNSHIP: Hoaglin	PHOTO No.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Daucus carota</i>	Herbaceous	Upland	10 %	
2. <i>Asclepias syriaca</i>	Herbaceous	Upland	10 %	
3. <i>Festuca sp.</i>	Herbaceous	Fac Up	40 %	
4. <i>Cirsium arvense</i>	Herbaceous	Fac Up	20 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very Poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12	A	10yr 4/2	10yr 4/6 40%	Silt Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: Yes	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>W 068 AA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/16/09</u>
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<u>2</u>	<u>2</u>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 acre

<u>1</u>	<u>3</u>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<u>8</u>	<u>11</u>
max 20 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other _____

<u>4</u>	<u>15</u>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☒ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

<u>15</u>

subtotal this page

Site: W0168AA	Rater(s): R Hook	Date: 2/16/09
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15

subtotal first page

-

15

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2

17

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

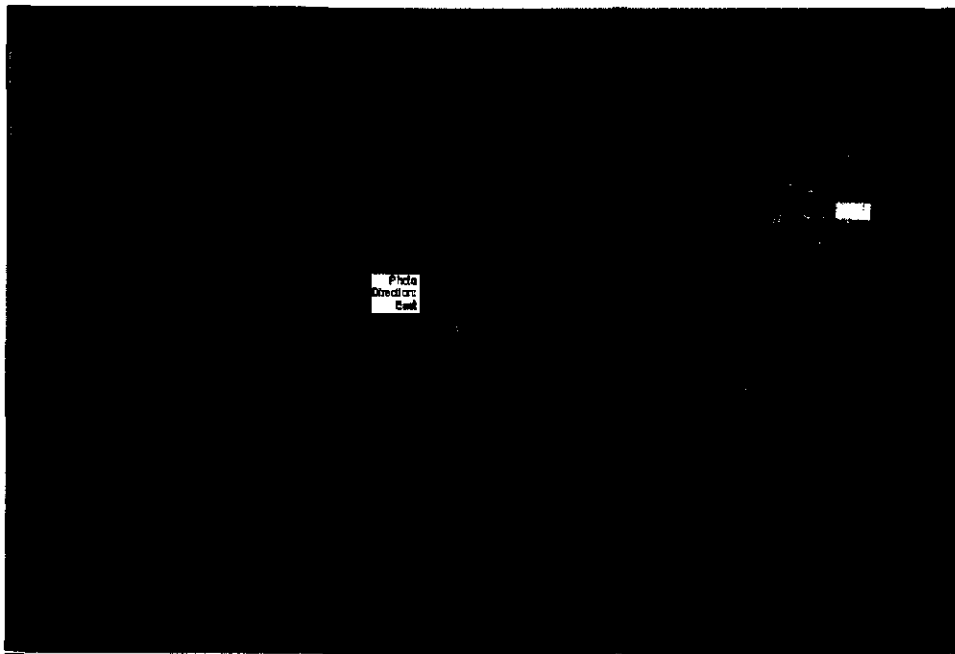
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

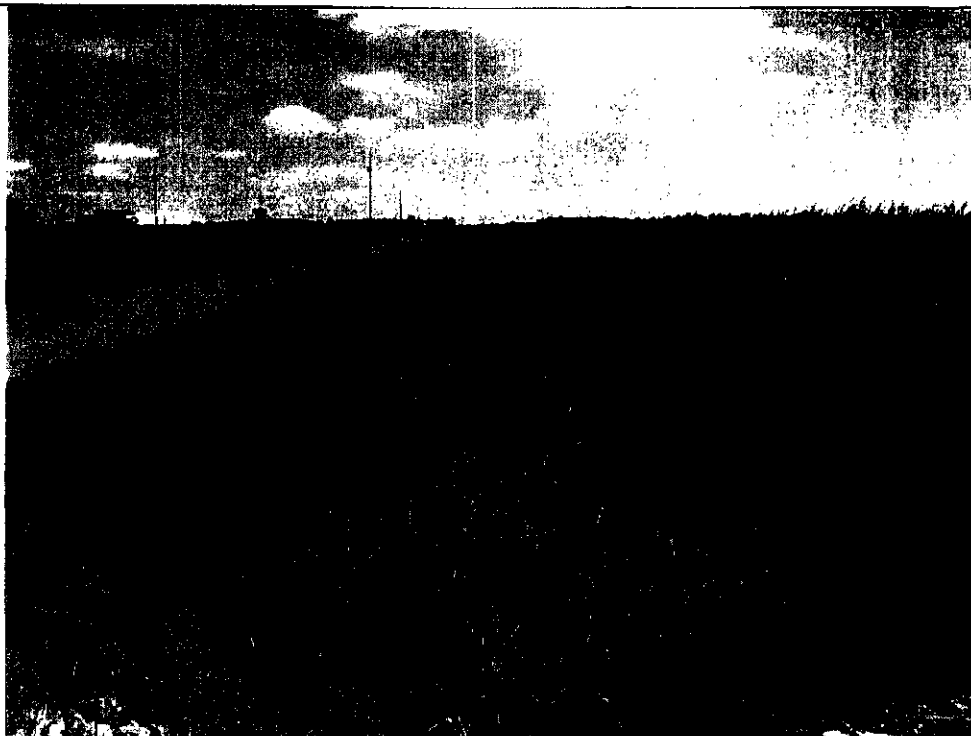
0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

17

GRAND TOTAL (max 100 pts)



Wetland
W169AA



Wetland W169AA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm

WETLAND ID No.: W169AA

ASSOCIATED STREAM ID No: N/A

DATE: 09/16/2009

CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm

INVESTIGATORS: R Hook

STATE/COUNTY: Ohio/ Van Wert

ROVER FILE: RAH091609A.cor

QUAD NAME: Scott

HUC12 CODE: 041000070702

TOWNSHIP: Hoaglin

PHOTO No.:

WETLAND QUALITY: Low

WETLAND TYPE: Palustrine
SUBTYPE: Emergent

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Typha latifolia</i>	Herbaceous	Obligate	50 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	50 %
3. <i>Scirpus validus</i>	Herbaceous	Obligate	10 %
4. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	10 %
5. <i>Lycopus americana</i>	Herbaceous	Obligate	10 %
6. <i>Ludwigia palustris</i>	Herbaceous	Obligate	10 %

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: roadside ditch

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: >16 (in)

DEPTH TO FREE WATER IN PIT: None (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

Water Marks

Oxi Root Channels

Drainage Patterns

REMARKS: roadside ditch

SOILS

MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-3	O	10Y 4/1	Oxidized Rhizospheres	Silt Loam
3+	C	5GY 3/1	10YR 5/6.5	Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric

Gleyed

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes

IS THIS SAMPLING POINT WITHIN A WETLAND? Yes

WETLAND HYDROLOGY PRESENT? Yes

IS THIS AN ISOLATED WETLAND? No

HYDRIC SOILS PRESENT? Yes

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED: No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: U169AA	
		ASSOCIATED WETLAND ID NO: W169AA	
DATE: 09/16/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC12 CODE: 041000070702	TOWNSHIP: Hoaglin	PHOTO NO.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Daucus carota</i>	Herbaceous	Upland	10 %
2. <i>Eriogonum inermis</i>	Herbaceous	Upland	30 %
3. <i>Festuca</i> sp.	Herbaceous	Fac Up	40 %
4. <i>Hibiscus trionum</i>	Herbaceous	Upland	10 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Latty silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very Poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. If No, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	2.5y 3/2		Silt Loam
4+	B	2.5y 3/1	7.5yr 4/6 2%	Silt Loam

HYDRIC SOIL INDICATORS:

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REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? Yes	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: Yes POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: W169AA	Rater(s): R. Hook	Date: 9/16/09
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >80 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pastures, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	11
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (6)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other

4	15
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

15

subtotal this page

Site: W169aa	Rater(s): R Hook	Date: 9/16/09
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15

subtotal first page

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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2	17
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

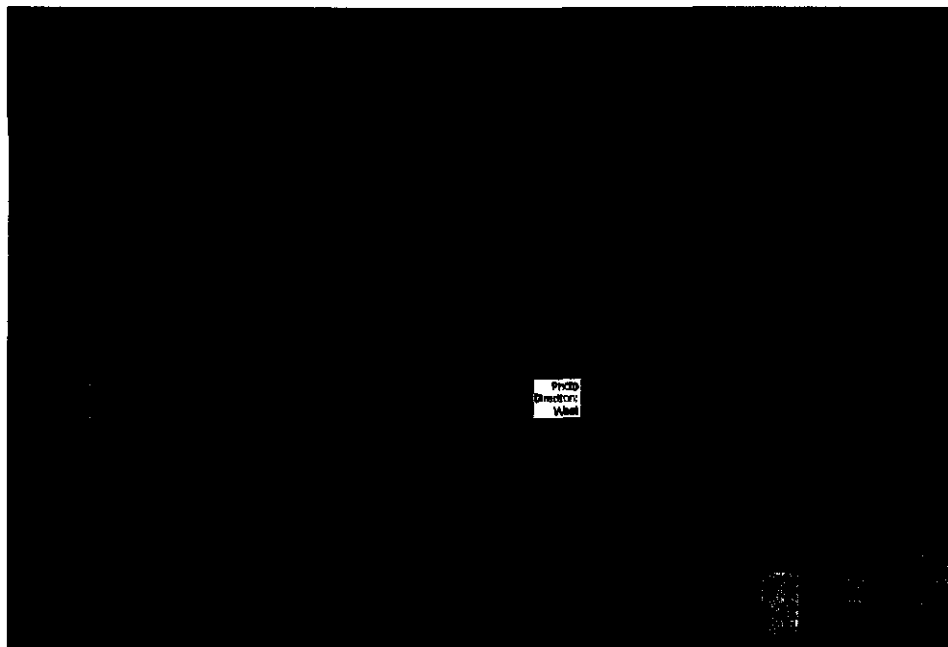
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

17

GRAND TOTAL (max 100 pts)



Wetland
WELMCA

N

0 10 20

Wetland
WELMCA



Wetland WELMCA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WELMCA	
		ASSOCIATED STREAM ID NO.: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.: 0	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia ooryzoides</i>	Herbaceous	Obligate	20 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	20 %
3. <i>Typha latifolia</i>	Herbaceous	Obligate	70 %
4. <i>Ludwigia palustris</i>	Herbaceous	Obligate	10 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: roadside ditch			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: 2 (in)		DEPTH TO SATURATED SOIL: 0 (in)	
DEPTH TO FREE WATER IN PIT: 0			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Inundated	Saturated Upper 12in	FAC Neutral Test	
Drainage Patterns			
REMARKS: roadside ditch			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-10	A	10YR 5/2	
10-12+	B	10YR 4/1	7.5YR5/6 30%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silty Clay Loam			
Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: WELMCA	Rater(s): R. Hook	Date: 9/17/09
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2	2
max 8 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1.1 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 26m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|--|
| <ul style="list-style-type: none"> <input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input | <ul style="list-style-type: none"> <input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____ |
|---|--|

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| <ul style="list-style-type: none"> <input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |
|--|---|

20
subtotal this page

Site: WELM CA Rater(s): TZ Hook Date: 9/17/09

20

subtotal first page

- 20

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 22

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☒ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

22 **GRAND TOTAL (max 100 pts)**

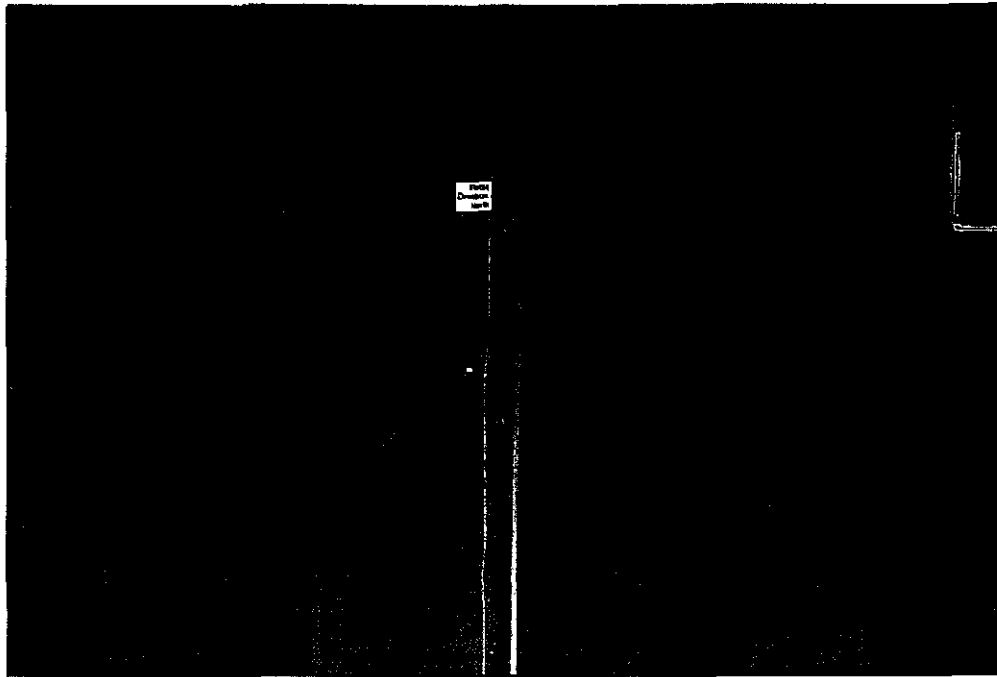


Photo Location
 USGS NHD Mapped Stream
 Wetland Boundary
 Additional Feature



Wetland
 WELMCB



Wetland WELMCB

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WELMCB	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO NO.: 0	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	20 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	30 %
3. <i>Typha angustifolia</i>	Herbaceous	Obligate	10 %
4.			%
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS: ditch			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Drainage Patterns		FAC Neutral Test	
Sediment Deposits			
REMARKS: ditch			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-10	A	10YR 5/2	Silty Clay Loam
10-12+	B	10YR 4/1	7.5YR5/6 30% Clay Loam
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED? No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: UELMCB		
		ASSOCIATED WETLAND ID No: WELMCB		
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Festuca rubra	Herbaceous	Fac Up	70 %	
2. Daucus carota	Herbaceous	Upland	10 %	
3. Setaria glauca	Herbaceous	Upland	10 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12	A	10yr 3/3		Silt Loam
12+	B	10yr 3/3		Silt Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? No				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WELMCB/WIOCA</u>	Rater(s): <u>R Hook</u>	Date: <u>9/17/09</u>
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

2.3 acres

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed	
<input checked="" type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____

5	18
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input checked="" type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment

18

subtotal this page

Site: WELMCB/W110CA Rater(s): R. Hook Date: 9/17/09

18
subtotal first page

max 10 pts. subtotal 18

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Rallot Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (~10)

max 20 pts. subtotal 19

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☒ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

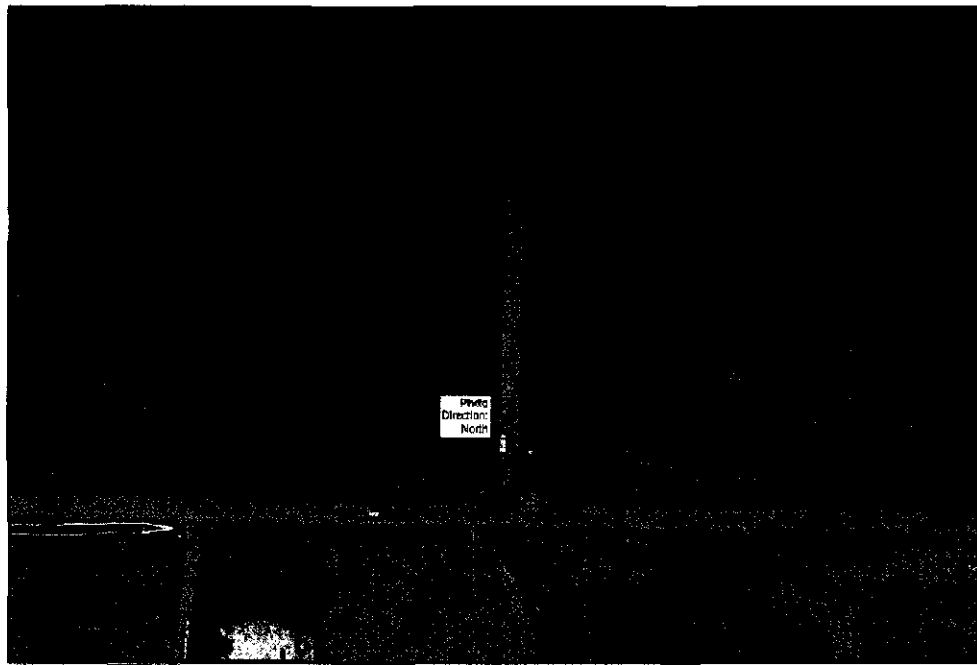
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 8.88 acres)
3	High 4ha (8.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapper Stream
☐ Wetland Boundaries
 Additional Features:



0 200 400 feet

Wetland
WMAINCA



Wetland WMAINCA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WMAINCA		
		ASSOCIATED STREAM ID No: N/A		
DATE: 09/17/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091709A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Polygonum sp.	Herbaceous	Fac Wet	40 %	
2. Cyperus sp.	Herbaceous	Fac	10 %	
3. Setaria sp.	Herbaceous	Fac	10 %	
4. Plantago major	Herbaceous	Fac Up	10 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks		FAC Neutral Test		
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12+	B	10YR 4/1	10YR 4/6 30%	Clay Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Cleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WMAINCA</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/16/09</u>
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1	1
max 8 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

3	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) Roadway R/W

11	15
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.8in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.8in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

6	21
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

21

subtotal this page

Site: WMA/NC Rater(s): R. Hook Date: 9/16/09

21

subtotal first page

- 21

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
☐ Fen (10)
☐ Old growth forest (10)
☐ Mature forested wetland (5)
☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
☐ Lake Plain Sand Prairies (Oak Openings) (10)
☐ Relict Wet Prairies (10)
☐ Known occurrence state/federal threatened or endangered species (10)
☐ Significant migratory songbird/water fowl habitat or usage (10)
☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2

23

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
☐ Moderately high (4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
☐ Coarse woody debris >15cm (6in)
☐ Standing dead >25cm (10in) dbh
☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

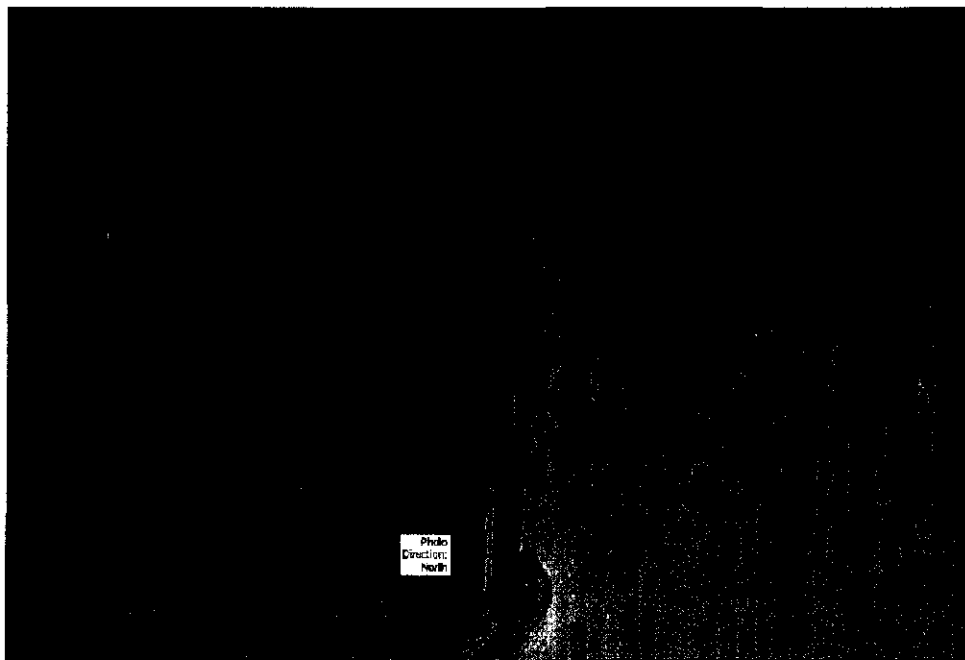
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

23

GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapped Stream
☐ Wetland Boundary
☐ Additional Feature



0 300 600 Feet

Wetland
WMAINCC



Wetland WMAINCC

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WMAINCC		
		ASSOCIATED STREAM ID No: SMAINCA		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Quercus palustris</i>	Tree	Fac Wet	20 %	
2. <i>Cephalanthus occidentalis</i>	Shrub	Obligate	10 %	
3. <i>Carex frankii</i>	Herbaceous	Obligate	20 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: old railroad ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drift Lines		Local Soil Survey		
Water Marks		FAC Neutral Test		
REMARKS: old railroad ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2	10YR 4/6 10%	Silt Loam
4+	B	10YR 4/1	7.5Y 5/6 30%	Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: UMAINCC		
		ASSOCIATED WETLAND ID NO: WMAINCC		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO NO.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Crataegus sp	Canopy	Fac Up	40 %	
2. Lonicera maackii	Shrub	Upland	50 %	
3. Solidago canadensis	Herbaceous	Fac Up	20 %	
4. Toxicodendron radicans	Herbaceous	Fac	30 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 30				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-8	A	10yr 4/2	0	Silt Loam
8+	B	10yr 4/2	10yr 4/6 20%	Silt Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: W MAIN CC	Rater(s): Hook	Date: 9/18/09
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.2 acre

4	5
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (6)
- ☒ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

8	21
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

21

subtotal this page

Site: WMAINCC Rater(s): R Hook Date: 9/18/09

21

subtotal first page

5 26

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 29

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

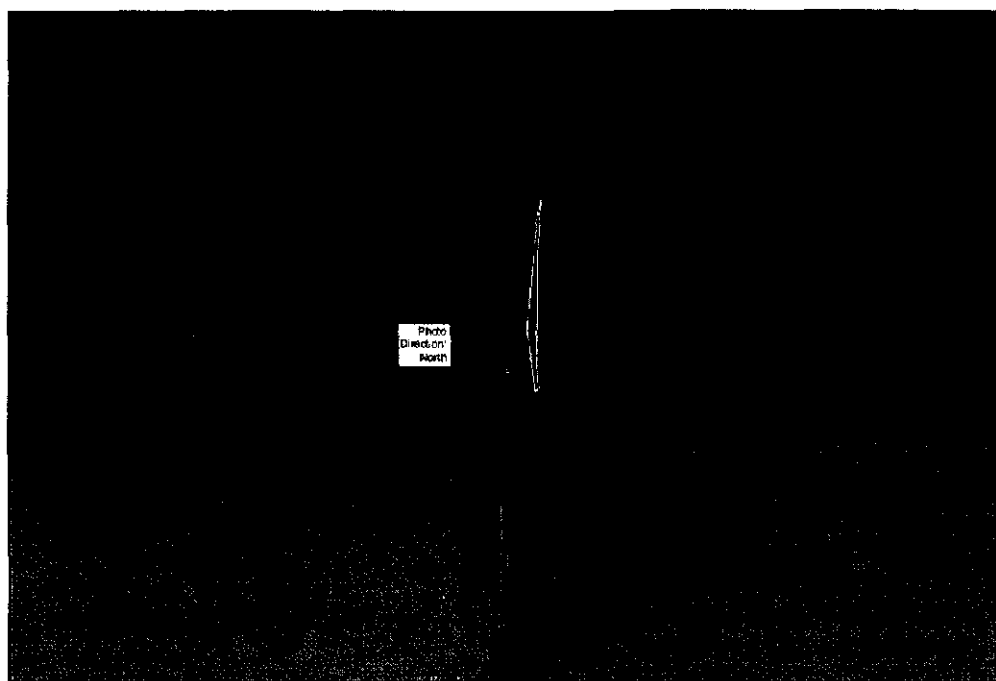
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

29 GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapped Streams
☐ Wetland Boundary
☐ Additional Feature



0 240 480 Feet

Wetland
WMAINCD



Wetland WMAINCD

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WMAINCD		
		ASSOCIATED STREAM ID No: N/A		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert ,	ROVER FILE: RAH091809A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Fraxinus pennsylvanica	Tree	Fac Wet	20 %	
2. Ulmus americana	Shrub	Fac Wet -	10 %	
3. Quercus palustris	Herbaceous	Fac Wet	20 %	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: old railroad ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drift Lines		Local Soil Survey		
Water Marks		FAC Neutral Test		
REMARKS: old railroad ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2	10YR 4/6 10%	Silt Loam
4+	B	10YR 4/1	7.5Y 5/6 25%	Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed. MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed. LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: UMAINCD		
		ASSOCIATED WETLAND ID No: WMAINCD		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Crataegus sp.	Shrub	Fac Up	20 %	
2. Carya ovata	Canopy	Fac Up -	50 %	
3. Elymus virginicus	Herbaceous	Fac Wet -	20 %	
4. Toxicodendron radicans	Herbaceous	Fac	20 %	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 40				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-8	A	10yr 4/2	0	Silt Loam
8+	B	10yr 4/2	10yr 4/6 20%	Silt Loam
HYDRIC SOIL INDICATORS:				
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED? No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: W MAINCD	Rater(s): Hook	Date: 9/18/09
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.15

9	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

15	25
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

9	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (8)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

34

subtotal this page

Site: WMAIN CD Rater(s): R Hook Date: 9/18/09

34

subtotal first page

5 39

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 42

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☒ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

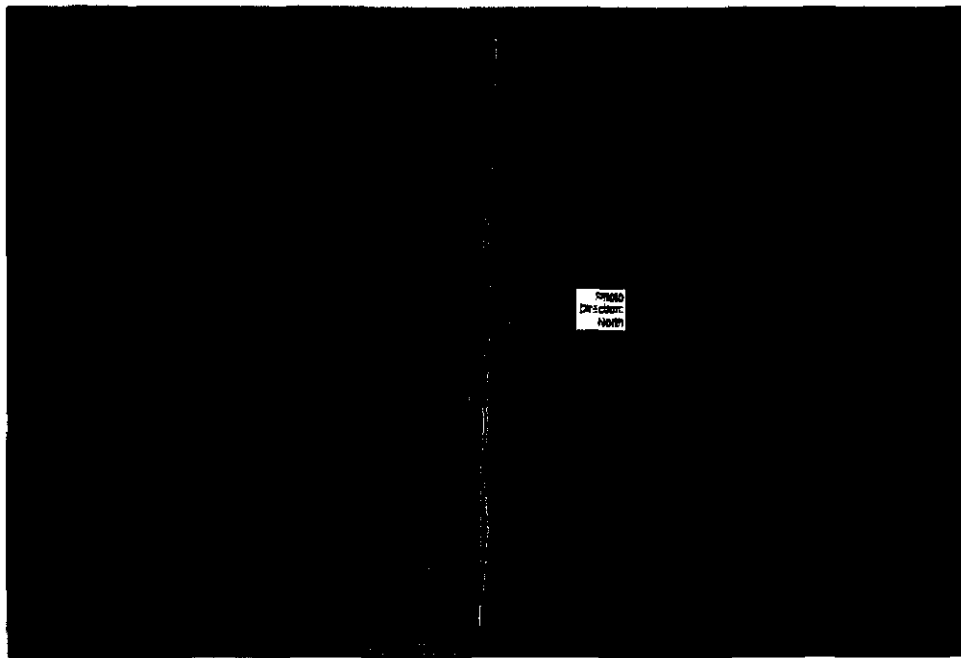
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42

GRAND TOTAL (max 100 pts)



Wetland
WMA INCE



Wetland WMA INCE

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WMAINCE		
		ASSOCIATED STREAM ID NO: N/A		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC. / Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: RAH091809A.cor	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO NO.:		
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. <i>Fraxinus pennsylvanica</i>	Tree	Fac Wet	70 %	
2. <i>Carex</i> sp.	Herbaceous	Fac Wet	10 %	
3.			%	
4.			%	
5.			%	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS: old railroad ditch				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Drift Lines		Local Soil Survey		
Water Marks		FAC Neutral Test		
REMARKS: old railroad ditch				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-4	A	10YR 4/2	10YR 4/6 10%	Silt Loam
4+	B	10YR 4/1	7.5Y 5/6 25%	Silt Loam
HYDRIC SOIL INDICATORS:				
Listed Hydric		Gleyed		
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WMA NCE</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/18/09</u>
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max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >60 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0-1

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max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; line-height: 40px; font-size: 24px; margin: 5px;">15</div>	<div style="border: 1px solid black; display: inline-block; width: 40px; height: 40px; line-height: 40px; font-size: 24px; margin: 5px;">25</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

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max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☒ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

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subtotal this page

Site: <u>WMA INCE -</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/18/09</u>
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34

subtotal first page

5 39

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 42

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

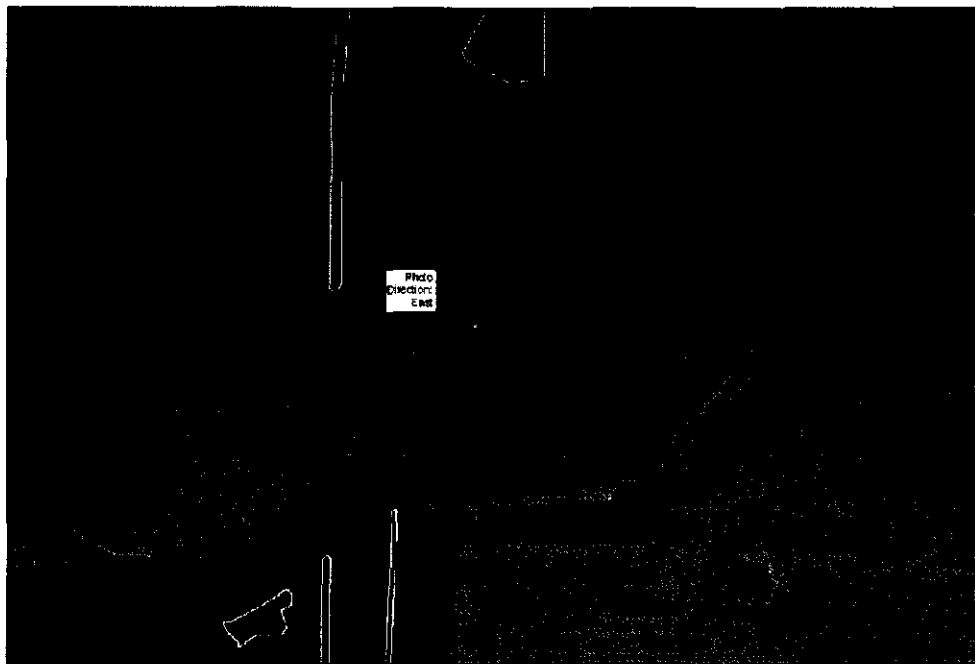
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42

GRAND TOTAL (max 100 pts)



○ Photo Location
 USGS NHD Mapped Streams
 Wetland Boundary
 Additional Features



0 10 20 feet

Wetland
WMAINCF



Wetland WMAINCF

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm

WETLAND ID NO.: WMAINCF

ASSOCIATED STREAM ID NO: SMAINCD

DATE: 09/21/2009

CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm

INVESTIGATORS: Hook

STATE/COUNTY: Ohio/ Van Wert

ROVER FILE: RAH090921.cor

QUAD NAME: Scott

HUC12 CODE: 041000070702

TOWNSHIP: Union

PHOTO NO.:

WETLAND QUALITY: Medium

WETLAND TYPE: Palustrine
SUBTYPE: Forested

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Quercus palustris</i>	Tree	Fac Wet	20 %
2. <i>Fraxinus pennsylvanica</i>	Tree	Fac Wet	70 %
3. <i>Ulmus rubra</i>	Tree	Fac	10 %
4. <i>Gleditsia triacanthos</i>	Herbaceous	Fac -	10 %
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: >16 (in)

DEPTH TO FREE WATER IN PIT: None (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

Water Marks

Local Soil Survey

Drift Lines

FAC Neutral Test

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Wabasha silty clay

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-6	A	10YR 3/1	10YR 4/6 10%	Silt Loam
8+	B	10YR 4/1	10YR 4/6 5%	Silty Clay Loam

HYDRIC SOIL INDICATORS:

Listed Hydric

Gleyed

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes

IS THIS SAMPLING POINT WITHIN A WETLAND? Yes

WETLAND HYDROLOGY PRESENT? Yes

IS THIS AN ISOLATED WETLAND? No

HYDRIC SOILS PRESENT? Yes

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED: No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: UMAINCF	
		ASSOCIATED WETLAND ID No: WMAINCF	
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:	
WETLAND QUALITY: N/A		WETLAND TYPE N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Acer saccharum	Tree	Fac Up	50 %
2. Juglans nigra	Tree	Fac Up	50 %
3. Lonicera maackii	Shrub	Upland	20 %
4. Toxicodendron radicans	Herbaceous	Fac	30 %
5. Carex pennsylvanica	Herbaceous	Upland	5 %
6. Lysimachia nummularia	Herbaceous	Fac Wet	20 %

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 40

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-8	A	10yr 3/2	0	Silt Loam
8+	B	10yr 4/2	10yr 4/4 30%	Silty clay Loam

HYDRIC SOIL INDICATORS:

Gleyed			
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REMARKS: Typical for soil type.

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? Yes	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No
	POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: W MAIN C F	Rater(s): MATTHEW NEH VATAL	Date: 9/21/09
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1	1
max 8 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (8 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.10 acre

9	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19	29
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☒ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or double check.

- ☐ Semi- to permanently inundated/saturated (5)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

17	46
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☒ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☒ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

46

subtotal this page

Site: <u>W MAINCF</u>	Rater(s): <u>Matthew Nechvatal</u>	Date: <u>9/21/09</u>
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46

subtotal first page

5	51
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

5	56
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☒ Aquatic bed
- ☒ Emergent
- ☒ Shrub
- ☒ Forest
- ☒ Mudflats
- ☒ Open water
- ☒ Other

6b. Horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☒ Coarse woody debris >15cm (6in)
- ☒ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

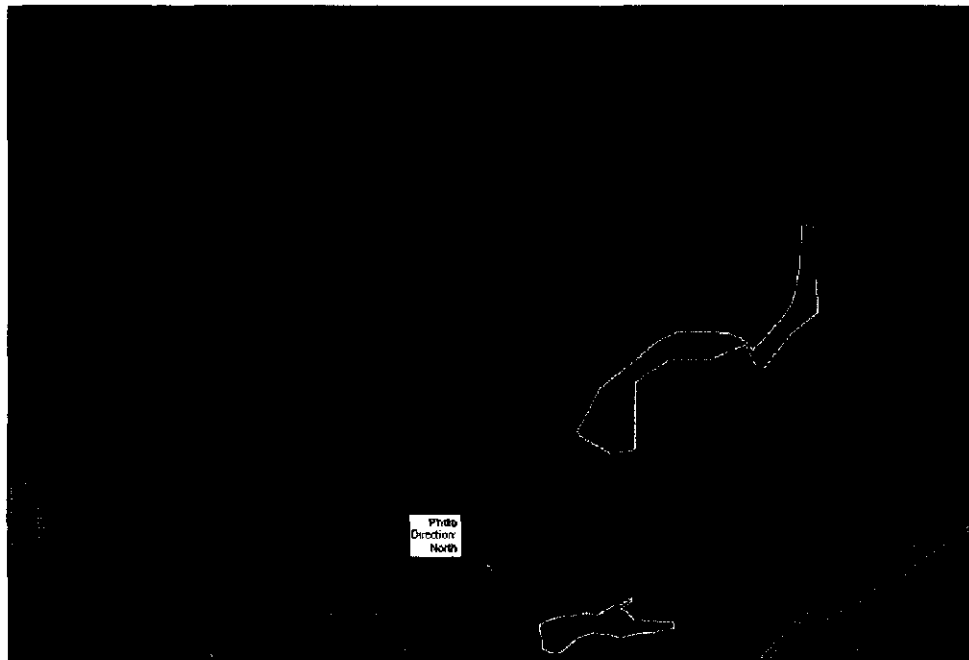
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

56 **GRAND TOTAL (max 100 pts)**



Q: Photo Location
USGS MJD Mapped Stream
Wetland Boundary
Wetland Photo



Wetland
WMAINCG



Wetland WMAINCG

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WMAINCG	
		ASSOCIATED STREAM ID NO: SMAINCD	
DATE:	CLIENT/PROJECT NAME: Heartland Wind LLC. / Blue Creek Wind Farm		
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.: 0	
WETLAND QUALITY: Medium		WETLAND TYPE Palustrine SUBTYPE: Forested	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Fraxinus pennsylvanica</i>	Tree	Fac Wet	100 %
2.			0 %
3.			0 %
4.			0 %
5.			0 %
6.			0 %
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER:	N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT:	None (in)		
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Water Marks	0	Water-Stained Leaves	FAC Neutral Test
	0	Local Soil Survey	0
REMARKS: old railroad drainage swale			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Wabasha silty clay			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-12	A	10YR 4/1	10YR 4/6 30%
			Silt Loam
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed		
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek

WETLAND ID No.: UMAINCG

ASSOCIATED WETLAND ID No: WMAINCG

DATE: 09/18/2009

CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm

INVESTIGATORS: Hook

STATE/COUNTY: Ohio/Van Wert

QUAD NAME: Scott

HUC 12 CODE: 041000070701

TOWNSHIP: Union

PHOTO No.:

WETLAND QUALITY: N/A

WETLAND TYPE: N/A
SUBTYPE: Upland

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Tilia americana</i>	Tree	Fac Up	20 %
2. <i>Juglans nigra</i>	Tree	Fac Up	20 %
3. <i>Carya ovata</i>	Tree	Fac Up	20 %
4. <i>Lonicera maackii</i>	Shrub	Upland	60 %
5. <i>Crataegus</i> sp.	shrub	Fac Up	20 %
6. <i>Toxicodendron radicans</i>	Herbaceous	Fac	30 %

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC): 15

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: >16 (in)

DEPTH TO FREE WATER IN PIT: None (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

None

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12	A	10yr 3/2		Silt Loam

HYDRIC SOIL INDICATORS:

None

REMARKS: Atypical for soil type.

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No

IS THIS SAMPLING POINT WITHIN A WETLAND? No

WETLAND HYDROLOGY PRESENT? No

IS THIS AN ISOLATED WETLAND? N/A

HYDRIC SOILS PRESENT? No

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED: No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: <u> </u>	Rater(s): <u> </u>	Date: <u> </u>
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

- Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
 - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
 - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
 - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2 pts)
 - ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - ☐ <0.1 acres (0.04ha) (0 pts)

1	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

- 2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
 - ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
 - ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
 - ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)
- 2b. Intensity of surrounding land use. Select one or double check and average.
- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
 - ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
 - ☒ MODERATELY HIGH. Residential, fenced pasture, park, conservation (illage, new fallow field. (3)
 - ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19	27
max 30 pts.	subtotal

Metric 3. Hydrology.

- 3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
 - ☐ Other groundwater (3)
 - ☒ Precipitation (1)
 - ☐ Seasonal/intermittent surface water (3)
 - ☐ Perennial surface water (lake or stream) (5)
- 3b. Connectivity. Score all that apply.
- ☒ 100 year floodplain (1)
 - ☒ Between stream/lake and other human use (1)
 - ☒ Part of wetland/upland (e.g. forest), complex (1)
 - ☒ Part of riparian or upland corridor (1)
- 3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
 - ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
 - ☒ <0.4m (<15.7in) (1)
- 3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4)
 - ☐ Regularly inundated/saturated (3)
 - ☒ Seasonally inundated (2)
 - ☐ Seasonally saturated in upper 30cm (12in) (1)
- 3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☒ None or none apparent (12)
 - ☐ Recovered (7)
 - ☐ Recovering (3)
 - ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

12	39
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

- 4a. Substrate disturbance. Score one or double check and average.
- ☐ None or none apparent (4)
 - ☒ Recovered (3)
 - ☐ Recovering (2)
 - ☐ Recent or no recovery (1)
- 4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
 - ☐ Very good (6)
 - ☐ Good (5)
 - ☐ Moderately good (4)
 - ☒ Fair (3)
 - ☐ Poor to fair (2)
 - ☐ Poor (1)
- 4c. Habitat alteration. Score one or double check and average.
- ☐ None or none apparent (9)
 - ☒ Recovered (6)
 - ☐ Recovering (3)
 - ☐ Recent or no recovery (1)

Check all disturbances observed	
<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

39
subtotal this page

Site: <u>WPH 201</u>	Rater(s): <u>M. H. H. H.</u>	Date: <u>1/1/01</u>
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2

sub total this page

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max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3

max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

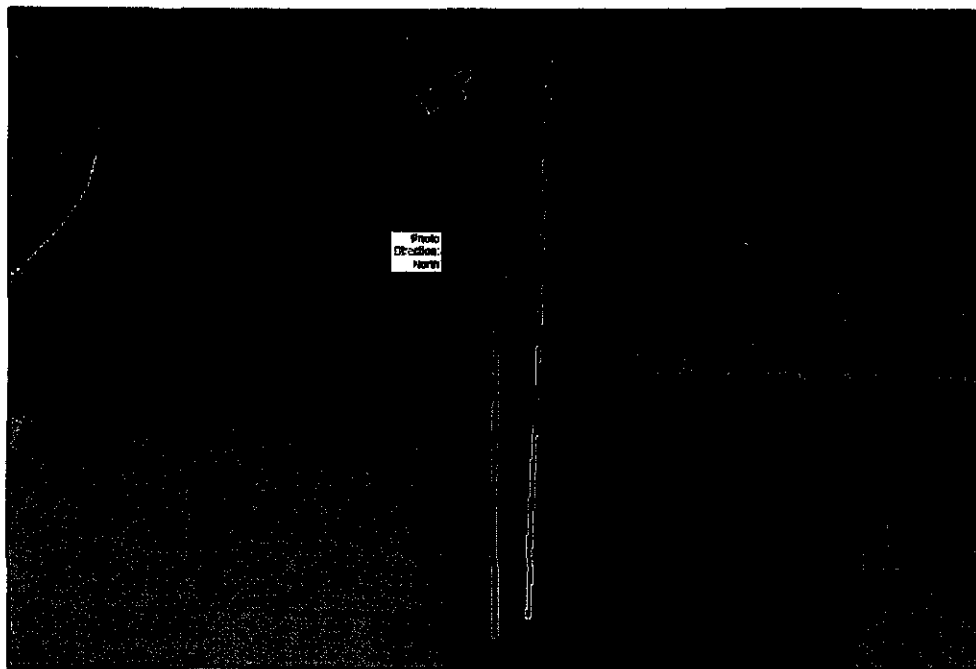
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42

GRAND TOTAL(max 100 pts)



○ Photo Location
 USGS NHD Mapped Stream
 Wetland Boundary
 Additional Feature



Wetland
WMAINCH



Wetland WMAINCH

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WMAINCH		
		ASSOCIATED STREAM ID NO.: SMAINCD		
DATE:	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott	
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.: 0		
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Fraxinus pennsylvanica	Tree	Fac Wet	40 %	
2. Quercus bicolor	Tree	Obligate	10 %	
3. Quercus palustris	Tree	Fac Wet	10 %	
4. Fraxinus pennsylvanica	Shrub	Fac Wet	30 %	
5.			0 %	
6.			0 %	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?	DESCRIBE:			
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)			
DEPTH TO FREE WATER IN FYT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
Water Marks	0	Water-Stained Leaves	FAC Neutral Test	
	0	Local Soil Survey	0	
REMARKS: old railroad drainage swale				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Wabasha silty clay			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-8	A	10YR 4/1	10YR 4/6 20%	Silt Loam
8+	B	10YR 5/1	10YR 4/6 20%	Sandy Clay Loam
0	0	0	0	0
HYDRIC SOIL INDICATORS:				
Listed Hydric	Gleyed	0	0	
REMARKS:				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes		
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: UMAINCH		
		ASSOCIATED WETLAND ID NO: WMAINCH		
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm			
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott		
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO NO.:		
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland		
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER	
1. Quercus rubra	Tree	Fac Up	40 %	
2. Xanthoxylum americanum	Shrub	Upland	10 %	
3. Prunus serotina	Shrub	Fac Up	10 %	
4. Lonicera maackii	Shrub	Upland	10 %	
5. Toxicodendron radicans	Herbaceous	Fac	20 %	
6.			%	
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 20				
VEGETATION REMARKS:				
HYDROLOGY				
RECORDED DATA?		DESCRIBE:		
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)				
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:		
None				
REMARKS:				
SOILS				
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained	
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?		
PROFILE DESCRIPTION				
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-10	A	10yr 3/2	0	Silt Loam
10+	B	10yr 4/2	10yr 4/6 10%	Silty clay Loam
HYDRIC SOIL INDICATORS:				
Gleyed				
REMARKS: Typical for soil type.				
WETLAND DETERMINATION				
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No		
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A		
HYDRIC SOILS PRESENT? Yes				
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No	
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA				
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>				

Site: <u>WMA IN CH</u>	Rater(s): <u>R. Hook</u>	Date: <u>9/21/09</u>
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<u>1</u>	<u>1</u>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.2 acre

<u>8</u>	<u>9</u>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☒ WIDE. Buffers average 60m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<u>16</u>	<u>25</u>
max 20 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (1)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

<u>9</u>	<u>34</u>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

<u>34</u>

subtotal this page

Site: WMAIN/CH Rater(s): R. Hook Date: 9/21/09

34

subtotal first page

5

39

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3

42

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☒ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

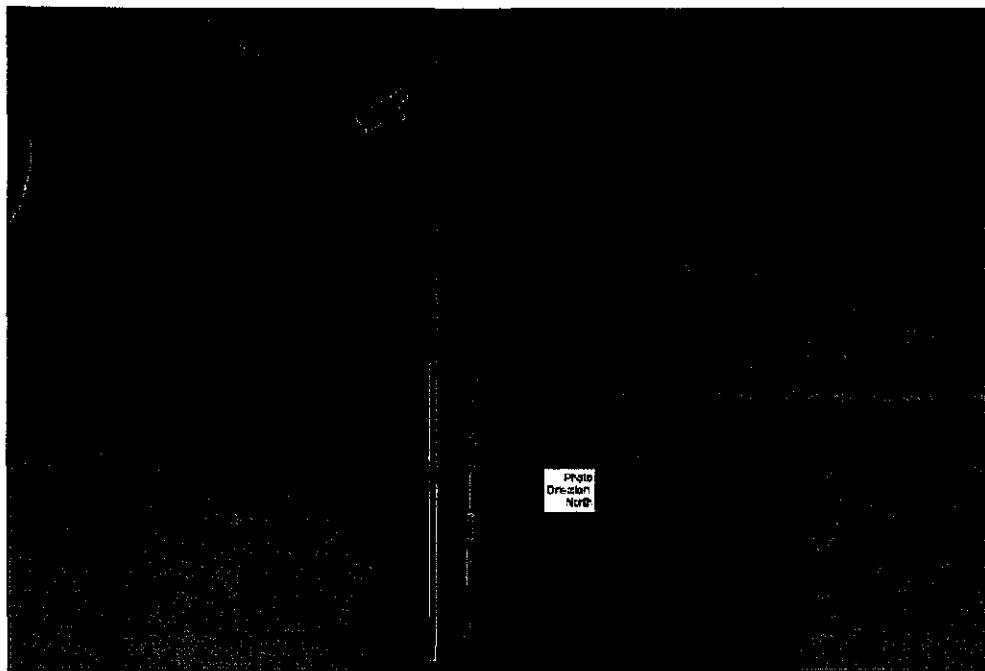
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42

GRAND TOTAL (max 100 pts)



Wetland WMAINCI

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WMAINCI	
		ASSOCIATED STREAM ID No: SMAINCD	
DATE:	CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm		
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott
HUC12 CODE: 041000070702	TOWNSHIP: Union	PHOTO No.: 0	
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Fraxinus pennsylvanica	Tree	Fac Wet	100 %
2.			0 %
3.			0 %
4.			0 %
5.			0 %
6.			0 %
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Water Marks	0	Water-Stained Leaves	FAC Neutral Test
	0	Local Soil Survey	0
REMARKS: old railroad drainage swale			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-8	A	10YR 4/1	10YR 4/6 20%
8+	B	10YR 5/1	10YR 4/6 20%
0	0	0	0
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed	0	0
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: UMAINCI	
		ASSOCIATED WETLAND ID No: WMAINCI	
DATE 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO No.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A	
		SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Quercus palustris</i>	Tree	Fac Up	10 %
2. <i>Carya ovala</i>	Tree	Fac Up	20 %
3. <i>Prunus serotina</i>	Shrub	Fac Up	10 %
4. <i>Lonicera maackii</i>	Shrub	Upland	10 %
5. <i>Toxicodendron radicans</i>	Herbaceous	Fac	20 %
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 20			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-10	A	10yr 3/2	0
10+	B	10yr 4/2	10yr 4/6 10%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Silty clay Loam			
HYDRIC SOIL INDICATORS:			
Gleyed			
REMARKS: Typical for soil type.			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: <u>WMA/NCI</u>	Rater(s): <u>R Hook</u>	Date: <u>9/21/09</u>
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

0.1 acre

8	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4 <

16	25
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

9	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☒ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|--|
| <ul style="list-style-type: none"> <input type="checkbox"/> mowing <input type="checkbox"/> grazing <input checked="" type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants | <ul style="list-style-type: none"> <input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment |
|---|--|

34

subtotal this page

Site: WMAIN CI Rater(s): R Hook Date: 9/24/99

34

subtotal first page

5 39

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 42

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

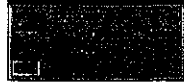
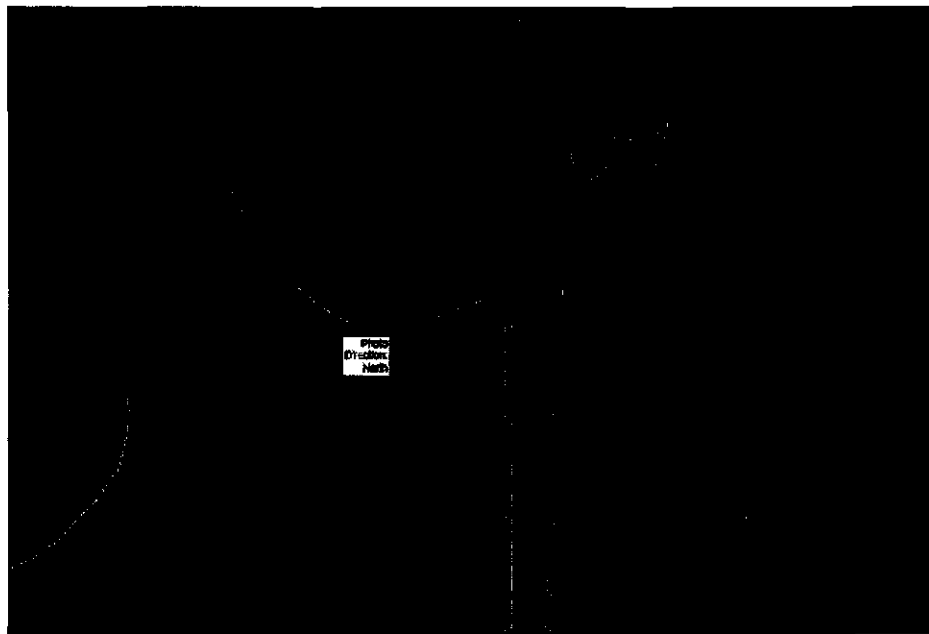
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

42 GRAND TOTAL (max 100 pts)



Wetland
WMAINCJ



Wetland WMAINCJ

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WMAINCJ	
		ASSOCIATED STREAM ID No: SMAINCD	
DATE:	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO No.: 0	
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested	
PLANT SPECIES		STRATUM	INDICATOR
1. Fraxinus pennsylvanica		Tree	Fac Wet
2. Crataegus sp.		Shrub	Fac Up
3. Toxicodendron radicans		Herbaceous	Fac
4. Carex vesicaria		Herbaceous	Obligate
5. Elymus riparius		Herbaceous	Fac wet
6. Canna arundinacea		Herbaceous	Fac wet
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 83			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PTT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Water Marks	0	Water-Stained Leaves	FAC Neutral Test
Drift Lines	0	Local Soil Survey	0
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Wabasha silty clay			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-9	A	10YR 4/2	
9+	B	10YR 5/1	10YR 4/6 10%
0	0	0	0
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed	0	0
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: UMAINCJ	
		ASSOCIATED WETLAND ID NO: WMAINCJ	
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO NO.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Fraxinus pennsylvanica</i>	Tree	Fac Wet	50 %
2. <i>Lonicera maackii</i>	Shrub	Upland	10 %
3. <i>Quercus palustris</i>	Tree	Fac wet	10 %
4. <i>Toxicodendron radicans</i>	Herbaceous	Fac	20 %
5. <i>Prunus serotina</i>	Shrub	Fac Up	10 %
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 60			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-8	A	10yr 4/2	Silt Loam
8+	B	10yr 5/1	Silty clay Loam
HYDRIC SOIL INDICATORS:			
Gleyed			
REMARKS: Typical for soil type			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: <u>WMAIN C J</u>	Rater(s): <u>R Hook</u>	Date: <u>9/21/09</u>
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<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">0</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">0</div>
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (8 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (6 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">9</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">9</div>
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">13</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">22</div>
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (1)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|--|
| <input type="checkbox"/> ditch
<input type="checkbox"/> tile
<input type="checkbox"/> dike
<input type="checkbox"/> weir
<input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> filling/grading
<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> dredging
<input type="checkbox"/> other _____ |
|--|--|

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">10</div>	<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">32</div>
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☒ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|--|
| <input type="checkbox"/> mowing
<input type="checkbox"/> grazing
<input checked="" type="checkbox"/> clearcutting
<input type="checkbox"/> selective cutting
<input type="checkbox"/> woody debris removal
<input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> sedimentation
<input type="checkbox"/> dredging
<input type="checkbox"/> farming
<input type="checkbox"/> nutrient enrichment |
|---|--|

<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center; font-size: 24px;">32</div>
subtotal this page

Site: WMAINCT Rater(s): TZ Hook Date: 9/21/09

32
subtotal first page

5 37
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 40
max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderates (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussucks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

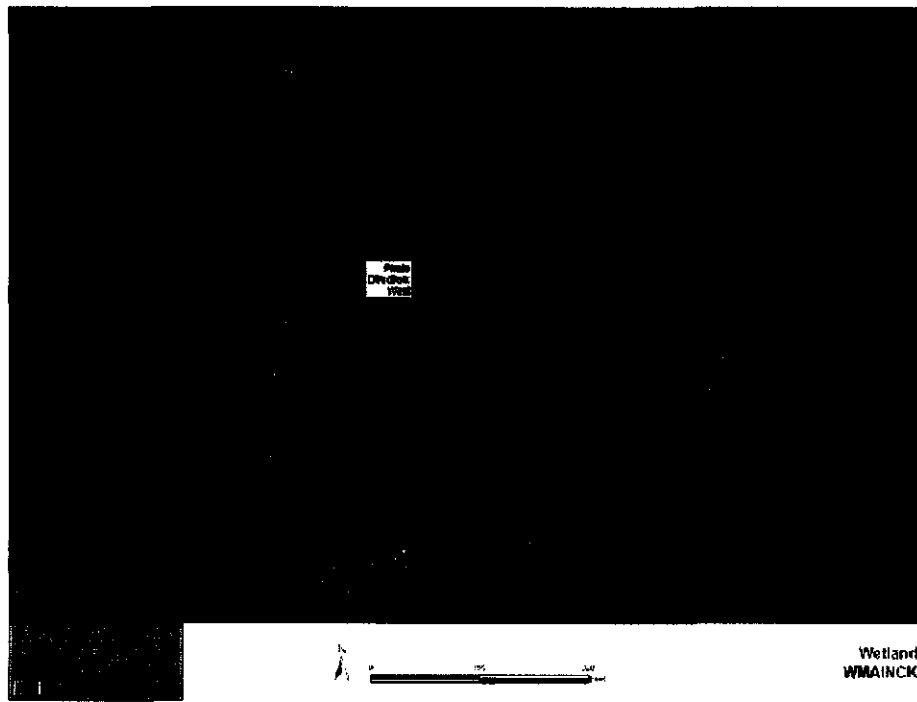
Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

40 **GRAND TOTAL (max 100 pts)**



Wetland WMAINCK

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID NO.: WMAINCK	
		ASSOCIATED STREAM ID NO: N/A	
DATE: 09/21/2009	CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio / Van Wert	ROVER FILE: RAH090921.cor	QUAD NAME: Scott
HUC 12 CODE: 041000070702	TOWNSHIP: Union	PHOTO NO.:	
WETLAND QUALITY: Medium		WETLAND TYPE: Palustrine SUBTYPE: Forested	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Quercus palustris</i>	Tree	Fac Wet	20 %
2. <i>Fraxinus pennsylvanica</i>	Tree	Fac Wet	70 %
3. <i>Ulmus rubra</i>	Tree	Fac	10 %
4. <i>Gleditsia triacanthos</i>	Herbaceous	Fac -	10 %
5.			%
6.			%
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
Water Marks		Local Soil Survey	
Drift Lines		FAC Neutral Test	
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Nappanee silty clay loam, 0 to 2 percent slopes			DRAINAGE CLASS: Somewhat poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-6	A	10YR 3/1	10YR 4/6 10
8+	B	10YR 4/1	10YR 4/6 5%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Silty Clay Loam			
HYDRIC SOIL INDICATORS:			
Listed Hydric		Gleyed	
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? Yes		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? No	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID NO.: UMAINCK	
		ASSOCIATED WETLAND ID NO: WMAINCK	
DATE: 09/18/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Scott	
HUC 12 CODE: 041000070701	TOWNSHIP: Union	PHOTO NO.:	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Acer saccharum</i>	Tree	Fac Up	50 %
2. <i>Juglans nigra</i>	Tree	Fac Up	50 %
3. <i>Carex pennsylvanica</i>	Herbaceous	Upland	5 %
4. <i>Toxicodendron radicans</i>	Herbaceous	Fac	30 %
5. <i>Parthenocissus quin</i>	Herbaceous	Fac Up	5 %
6. <i>Polygonum virginianum</i>	Herbaceous	Fac	10 %
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 50			
VEGETATION REMARKS:			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)		DEPTH TO SATURATED SOIL: >16 (in)	
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None			
REMARKS:			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoyville silty clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-8	A	10yr 3/2	
8+	B	10yr 4/4	10yr 4/2 30%
TEXTURE, CONCRETIONS, STRUCTURE, ETC.			
Silt Loam			
Silt Loam			
HYDRIC SOIL INDICATORS:			
None			
REMARKS: Atypical for this soil type.			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? No	
WETLAND HYDROLOGY PRESENT? No		IS THIS AN ISOLATED WETLAND? N/A	
HYDRIC SOILS PRESENT? No			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: No	POTENTIAL PROBLEM AREA? No
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: K	Rater(s):	Date: 9/2
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1	1
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Metric 1. Wetland Area (size).

max 6 pts.

subtotal

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

12	13
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max 14 pts.

subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☒ **WIDE.** Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ **MEDIUM.** Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ **NARROW.** Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ **VERY NARROW.** Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☒ **VERY LOW.** 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☒ **LOW.** Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ **MODERATELY HIGH.** Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☐ **HIGH.** Urban, industrial, open pasture, row cropping, mining, construction. (1)

17	33
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max 30 pts.

subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☒ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☒ 100 year floodplain (1)
- ☒ Between stream/lake and other human use (1)
- ☒ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

18	51
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max 20 pts.

subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☒ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☒ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☒ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> mowing | <input type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

51

subtotal this page

Site: W. K	Rater(s):	Date:
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subtotal this page

5

5

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☒ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

8

13

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☒ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☒ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

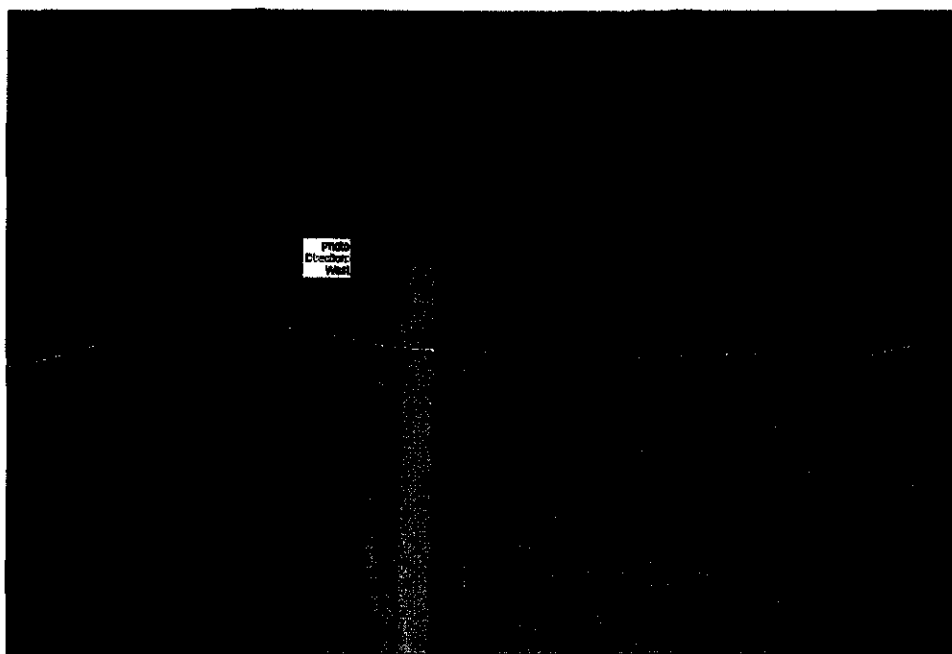
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

64

GRAND TOTAL(max 100 pts)



Wetland
WRICHCA



Wetland WRICHCA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm

WETLAND ID NO.: WRICHCA

ASSOCIATED STREAM ID NO: N/A

DATE: 10/14/2009

CLIENT/PROJECT NAME: Heartland Wind LLC / Blue Creek Wind Farm

INVESTIGATORS: Hook

STATE/COUNTY: Ohio/Van Wert

ROVER FILE: RAHD91014A.cor

QUAD NAME: Convoy

HUC12 CODE: 041000070703

TOWNSHIP: Union

PHOTO NO.: 013

WETLAND QUALITY: Low

WETLAND TYPE: Palustrine
SUBTYPE: Emergent

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. <i>Leersia oryzoides</i>	Herbaceous	Obligate	20 %
2. <i>Scirpus atrovirens</i>	Herbaceous	Obligate	50 %
3. <i>Typha latifolia</i>	Herbaceous	Obligate	30 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 100

VEGETATION REMARKS: drainage ditch

HYDROLOGY

RECORDED DATA?

DESCRIBE:

DEPTH OF SURFACE WATER: N/A (in)

DEPTH TO SATURATED SOIL: 0 (in)

DEPTH TO FREE WATER IN PIT: 1 (in)

PRIMARY WETLAND INDICATORS:

SECONDARY WETLAND INDICATORS:

Saturated Upper 12in

FAC Neutral Test

Drainage Patterns

Oxi Root Channels

REMARKS: drainage ditch

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)

DRAINAGE CLASS: Very poorly drained

TAXONOMY (SUBGROUP):

FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12+	B	10YR 4/1	7.5YR 4/6	Silt Loam

HYDRIC SOIL INDICATORS:

Gleyed

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? Yes

IS THIS SAMPLING POINT WITHIN A WETLAND? Yes

WETLAND HYDROLOGY PRESENT? Yes

IS THIS AN ISOLATED WETLAND? No

HYDRIC SOILS PRESENT? Yes

NORMAL CIRCUMSTANCES? Yes

SIGNIFICANTLY DISTURBED: No

POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

CH2MHILL

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY) - UPLAND POINT

SURVEY TYPE: Blue Creek		WETLAND ID No.: URICHCA	
		ASSOCIATED WETLAND ID No: WRICHCA	
DATE: 10/14/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: Hook	STATE/COUNTY: Ohio/Van Wert	QUAD NAME: Convooy	
HUC 12 CODE: 041000070703	TOWNSHIP: Union	PHOTO No.: 013	
WETLAND QUALITY: N/A		WETLAND TYPE: N/A SUBTYPE: Upland	

PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Festuca sp.	Herbaceous	Fac Up	40 %
2. Bromus inermis	Herbaceous	Upland	50 %
3. Daucus carota	Herbaceous	Upland	10 %
4.			%
5.			%
6.			%

PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 0

VEGETATION REMARKS:

HYDROLOGY

RECORDED DATA?	DESCRIBE:
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)
DEPTH TO FREE WATER IN PIT: None (in)	
PRIMARY WETLAND INDICATORS:	SECONDARY WETLAND INDICATORS:
None	

REMARKS:

SOILS

MAP UNIT NAME (SERIES AND PHASE): Hoytville silty clay, 0 percent slopes (flats)	DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):	FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?

PROFILE DESCRIPTION

DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)	TEXTURE, CONCRETIONS, STRUCTURE, ETC.
0-12+	A	2.5y 4/3		Silty Clay Loam

HYDRIC SOIL INDICATORS:

REMARKS:

WETLAND DETERMINATION

HYDROPHYTIC VEGETATION PRESENT? No	IS THIS SAMPLING POINT WITHIN A WETLAND? No
WETLAND HYDROLOGY PRESENT? No	IS THIS AN ISOLATED WETLAND? N/A
HYDRIC SOILS PRESENT? No	
NORMAL CIRCUMSTANCES? Yes	SIGNIFICANTLY DISTURBED: No POTENTIAL PROBLEM AREA? No

DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA

HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.

MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.

LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.

Site: WRIGHT CA Rater(s): R. HOOK Date: 10/14/09

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☒ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1.0 acre

1	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 60m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

10	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (7)
- ☐ Regularly inundated/saturated (3)
- ☒ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	20
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☒ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☒ dredging
- ☐ farming
- ☐ nutrient enrichment

20

subtotal this page

Site: W R I C H C A	Rater(s): R Hook	Date: 10/14/09
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20

subtotal first page

—	20
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max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3	23
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 GRAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

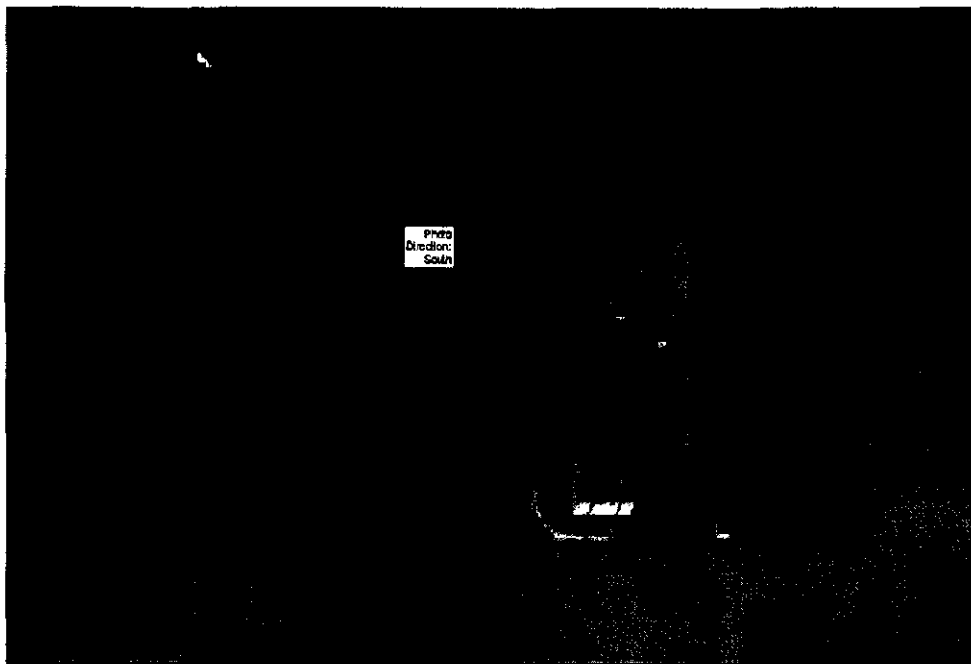
0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

23

GRAND TOTAL (max 100 pts)



☐ Photo Location
☐ USGS NHD Mapped Stream
☐ Wetland Boundary
☐ Additional Feature



0 100 200 Feet

Wetland
WSUBA



Wetland WSUBA

ROUTINE WETLAND DELINEATION DATA FORM (1987 COE METHODOLOGY)

SURVEY TYPE: Blue Creek Wind Farm		WETLAND ID No.: WSUBA	
		ASSOCIATED STREAM ID No: N/A	
DATE: 10/15/2009	CLIENT/PROJECT NAME: Heartland Wind LLC./ Blue Creek Wind Farm		
INVESTIGATORS: R Hook	STATE/COUNTY: Ohio/Van Wert	ROVER FILE: 0	QUAD NAME: Scott
HUC 12 CODE: 041000070703	TOWNSHIP: Hoaglin	PHOTO No.: 0	
WETLAND QUALITY: Low		WETLAND TYPE: Palustrine SUBTYPE: Emergent	
PLANT SPECIES	STRATUM	INDICATOR	PERCENT COVER
1. Zea mays	Herbaceous	Upland	40 %
2. Setaria faberi	Herbaceous	Upland	10 %
3. Setaria glauca	Herbaceous	Fac	10 %
4. Cyperus esculentus	Herbaceous	Fac wet	10 %
5. Polygonum pensylvanicum	Herbaceous	Fac wet	10 %
6. Chenopodium album	Herbaceous	Fac Up	25 %
PERCENT OF DOMINANT SPECIES THAT ARE OBL, FACW, FACW+, FACW-, FAC+, OR FAC (EXCLUDING FAC-): 50			
VEGETATION REMARKS: farmed			
HYDROLOGY			
RECORDED DATA?		DESCRIBE:	
DEPTH OF SURFACE WATER: N/A (in)	DEPTH TO SATURATED SOIL: >16 (in)		
DEPTH TO FREE WATER IN PIT: None (in)			
PRIMARY WETLAND INDICATORS:		SECONDARY WETLAND INDICATORS:	
None	0	Local Soil Survey	
	0	Other	0
REMARKS: farmed, suppressed crop			
SOILS			
MAP UNIT NAME (SERIES AND PHASE): Hoytville clay, 0 percent slopes (flats)			DRAINAGE CLASS: Very poorly drained
TAXONOMY (SUBGROUP):		FIELD OBSERVATIONS CONFIRM MAPPED TYPE. IF NO, SOIL TYPE ENCOUNTERED?	
PROFILE DESCRIPTION			
DEPTH (INCHES)	HORIZON	MATRIX COLOR (MUNSELL MOIST)	MOTTLE COLOR (MUNSELL MOIST)
0-9	A	2.5Y 3/3	
9+	B	10YR 4/1	10YR 4/6 20%
HYDRIC SOIL INDICATORS:			
Listed Hydric	Gleyed		
REMARKS:			
WETLAND DETERMINATION			
HYDROPHYTIC VEGETATION PRESENT? No		IS THIS SAMPLING POINT WITHIN A WETLAND? Yes	
WETLAND HYDROLOGY PRESENT? Yes		IS THIS AN ISOLATED WETLAND? Yes	
HYDRIC SOILS PRESENT? Yes			
NORMAL CIRCUMSTANCES? Yes		SIGNIFICANTLY DISTURBED: Yes	POTENTIAL PROBLEM AREA? Yes
DESCRIPTION OF WETLAND CROSSING TYPES AND WETLAND QUALITY CRITERIA			
<p>HIGH QUALITY WETLAND: no indication of stress or disturbance in wetland or adjacent area - diverse and mature vegetation types - hydrologic and soil indicators are characteristic of the specific community type - provides suitable habitat for wildlife - high quality perennial streams are often observed.</p> <p>MODERATE QUALITY WETLAND: mild to moderate disturbances have caused alterations in immediately adjacent areas - slightly altered natural vegetation, hydrology and/ or soil characteristics - provides suitable habitat for wildlife and vegetation - associated perennial or intermittent streams are of relatively good quality and aren't significantly disturbed.</p> <p>LOW QUALITY WETLAND: severe disturbances have caused significant changes to vegetation, soils, or hydrology - hydroperiod alterations, if present, have directly affected plant species - community composition has changed - noticeable stress or death of plant species - soil subsidence may have occurred in areas with decreased hydroperiod - mechanical alteration of plant species or soils - grazing from livestock - channelization of stream courses or ditching - little suitable habitat for wildlife and vegetation - associated perennial or intermittent streams significantly disturbed.</p>			

Site: <u>W. SUBA</u>	Rater(s): <u>P. Heck</u>	Date: <u>10/15/09</u>
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0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☒ <0.1 acres (0.04ha) (0 pts)

0.07 acre

1	1
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- ☐ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- ☐ LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- ☐ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- ☒ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6	7
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.

- ☐ Semi- to permanently inundated/saturated (5)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|--|
| <input type="checkbox"/> ditch
<input checked="" type="checkbox"/> tile
<input type="checkbox"/> dike
<input type="checkbox"/> weir
<input type="checkbox"/> stormwater input | <input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> filling/grading
<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> dredging
<input type="checkbox"/> other _____ |
|---|--|

3	10
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.

- ☐ None or none apparent (9)
- ☐ Recovered (8)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- | | |
|--|---|
| <input type="checkbox"/> mowing
<input type="checkbox"/> grazing
<input type="checkbox"/> clearcutting
<input type="checkbox"/> selective cutting
<input type="checkbox"/> woody debris removal
<input type="checkbox"/> toxic pollutants | <input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> sedimentation
<input type="checkbox"/> dredging
<input checked="" type="checkbox"/> farming
<input type="checkbox"/> nutrient enrichment |
|--|---|

1P

subtotal this page

Site: <u>WSUBA</u>	Rater(s): <u>R. Hook</u>	Date: <u>10/15/09</u>
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10

subtotal first page

max 10 pts.	subtotal
1	10

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- ☐ Lake Erie coastal/tributary wetland-restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Relict Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/water fowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts.	subtotal
2	12

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of Invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/mounds
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

12 GRAND TOTAL (max 100 pts)